

Federal Register

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Tuesday, August 10, 1982

Presidential Documents

Title 3—

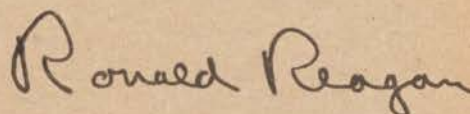
Executive Order 12377 of August 6, 1982

The President

Joint Mexican-United States Defense Commission

By the authority vested in me as President by the Constitution and laws of the United States of America, and in order to add a member of the Marine Corps to the Joint Mexican-United States Defense Commission, it is hereby ordered that the third paragraph of Executive Order No. 9080 of February 27, 1942, as amended by Executive Order No. 10692 of December 22, 1956, is further amended to read as follows:

"The United States membership of the Commission shall consist of an Army member, a Navy member, an Air Force member, and a Marine Corps member, each of whom shall be designated by the Secretary of Defense and serve during the pleasure of the Secretary. The Secretary shall designate from among the United States members the chairman thereof and may designate alternate United States members of the Commission."



THE WHITE HOUSE,
August 6, 1982.

[FR Doc. 82-21772

Filed 8-6-82; 4:17 pm]

Billing code 3195-01-M

Presidential Documents

Document 1000 of 1000

John F. Kennedy Library

On the morning of the 22nd of November, 1963, the President of the United States, John F. Kennedy, was assassinated in Dallas, Texas. The President was shot while he was in a motorcade through the city. The assassin, Lee Harvey Oswald, was killed on the same day. The President's death was a tragedy for the entire nation.

The President's death was a tragedy for the entire nation. The President was a man of great courage and integrity. He was a man who had dedicated his life to the service of his country. His death was a great loss to the United States.

John F. Kennedy

THE WHITE HOUSE

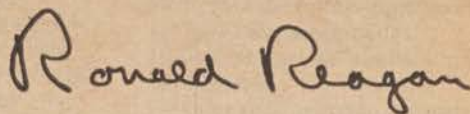
Washington, D.C.

Presidential Documents

Executive Order 12378 of August 6, 1982

President's Committee on the Arts and the Humanities

By the authority vested in me as President by the Constitution of the United States of America, and in order to increase the membership of the President's Committee on the Arts and the Humanities by one, it is hereby ordered that the last sentence of Section 1(a) of Executive Order No. 12367 of June 15, 1982, is amended by substituting a comma for "and" immediately after "Smithsonian Institution" and by adding "and the Chairman of the Board of Trustees of the John F. Kennedy Center for the Performing Arts" immediately after "National Gallery of Art".



THE WHITE HOUSE,
August 6, 1982.

[FR Doc. 82-21773

Filed 8-6-82; 4:18 pm]

Billing code 3195-01-M

Psychological Experiments

Psychological Experiments

Psychological Experiments

The first experiment was conducted in the laboratory of the University of Chicago. The subjects were 20 college students, 10 men and 10 women, who were paid for their participation. The experiment was designed to investigate the effects of the physical environment on the psychological state of the subjects. The subjects were divided into two groups, one of which was exposed to a noisy environment and the other to a quiet environment. The results of the experiment showed that the subjects in the noisy environment were more likely to make errors and were slower to respond than the subjects in the quiet environment. This suggests that the physical environment can have a significant effect on the psychological state of the subjects.

Psychological Experiments

Psychological Experiments

Psychological Experiments

Rules and Regulations

Federal Register

Vol. 47, No. 154

Tuesday, August 10, 1982

This section of the FEDERAL REGISTER contains regulatory documents having general applicability and legal effect, most of which are keyed to and codified in the Code of Federal Regulations, which is published under 50 titles pursuant to 44 U.S.C. 1510.

The Code of Federal Regulations is sold by the Superintendent of Documents. Prices of new books are listed in the first FEDERAL REGISTER issue of each month.

DEPARTMENT OF AGRICULTURE

Agricultural Marketing Service

7 CFR Part 51

United States Standards for Grades of Kiwifruit¹

AGENCY: Agricultural Marketing Service, USDA.

ACTION: Final rule.

SUMMARY: This rule establishes voluntary U.S. Standards for Grades of Kiwifruit. This action has been taken at the request of the Kiwifruit Growers of California and California Kiwifruit Commission. These standards will provide industry with a uniform basis for trading which will assist in the promotion of orderly, efficient marketing.

EFFECTIVE DATE: September 9, 1982.

FOR FURTHER INFORMATION CONTACT: Francis J. O'Sullivan, Fresh Products Branch, Fruit and Vegetable Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington, DC 20250, (202) 447-2188.

SUPPLEMENTARY INFORMATION:

Executive Order 12291

This action has been reviewed under USDA guidelines implementing Executive Order 12291 and Secretary's Memorandum 1512-1 and has been classified as a non-major rule.

Effect on Small Entities

Eddie F. Kimbrell, Deputy Administrator, Commodity Services, Agricultural Marketing Service, has determined this rule will not have a significant economic impact on a substantial number of small entities, as

¹ Compliance with the provisions of these standards shall not excuse failure to comply with provisions of applicable Federal or State laws.

defined by the Regulatory Flexibility Act, Pub. L. 96-354 (5 U.S.C. 601) because it reflects current marketing practices.

Background

For many years the only kiwifruit available in this country was imported, primarily from New Zealand. Within the last few years commercial production began in this country. California, presently the leading producer, has over 3,000 acres under cultivation. A substantial part of this crop is being marketed internationally. Grade standards will provide this rapidly growing industry with standards similar to those used extensively by the fresh produce industry to assist in the orderly marketing of many commodities.

In February 1980 the Kiwifruit Growers of California and the California Kiwifruit Commission formally requested the Department to develop grade standards for kiwifruit. A "Market Survey To Consider Issuance of United States Standards for Grades of Kiwifruit" was developed in cooperation with industry and distributed for comment to interested persons in November of 1980. Comments received were generally favorable.

The proposed rule for establishing voluntary grade standards for kiwifruit was published in the Federal Register on November 20, 1981 (46 FR 57023). Copies of the proposed rule were widely distributed to interested persons for comment.

Comments

Seventeen responses were received during the period for comment which ended February 25, 1982. The comments were in general agreement with the requirements of the standards as proposed. Except for a few minor changes, editorial and those mutually agreed upon, the proposed rule remains essentially unchanged.

List of Subjects in 7 CFR Part 51

Fresh fruits, vegetables, and other products (Inspection, Certification and Standards).

PART 51—FRESH FRUITS, VEGETABLES AND OTHER PRODUCTS (INSPECTION, CERTIFICATION, AND STANDARDS)

Accordingly, United States Standards for Grades of Kiwifruit are established

and codified as 7 CFR 51.2335 through 2340 and read as follows:

* * * * *

Subpart—United States Standards for Grades of Kiwifruit

Sec.

- 51.2335 Grades.
- 51.2336 Tolerances.
- 51.2337 Application of tolerances.
- 51.2338 Standard pack.
- 51.2339 Definitions.
- 51.2340 Classification of defects.

§ 51.2335 Grades.

(a) "U.S. Fancy" consists of kiwifruit which meet the following requirements:

- (1) Basic Requirements:
 - (i) Similar varietal characteristics;
 - (ii) Mature;
 - (iii) Not soft, overripe, or shriveled;
 - (iv) Carefully packed;
 - (v) Clean; and,
 - (vi) Well formed.
- (2) Free From:
 - (i) Worm holes;
 - (ii) Broken skins which are not healed;
 - (iii) Sunscald;
 - (iv) Freezing injury;
 - (v) Internal breakdown; and,
 - (vi) Decay.
- (3) Free From Injury By:
 - (i) Bruises;
 - (ii) Leaf or limbrubs;
 - (iii) Discoloration;
 - (iv) Hail;
 - (v) Growth cracks;
 - (vi) Scab;
 - (vii) Scars;
 - (viii) Heat, sprayburn, or sunburn;
 - (ix) Scale;
 - (x) Insects;
 - (xi) Other diseases; and,
 - (xii) Mechanical or other means.
- (4) Tolerances. (See § 51.2336):

(b) "U.S. No. 1" consists of kiwifruit which meet the following requirements:

- (1) Basic Requirements:
 - (i) Similar varietal characteristics;
 - (ii) Mature;
 - (iii) Not soft, overripe, or shriveled;
 - (iv) Carefully packed;
 - (v) Clean; and,
 - (vi) Fairly well formed.
- (2) Free From:
 - (i) Worm holes;
 - (ii) Broken skins which are not healed;
 - (iii) Sunscald;
 - (iv) Freezing injury;
 - (v) Internal breakdown; and,
 - (vi) Decay.
- (3) Free From Damage By:

- (i) Bruises;
 - (ii) Leaf or limbrubs;
 - (iii) Discoloration;
 - (iv) Hail;
 - (v) Growth cracks;
 - (vi) Scab;
 - (vii) Scars;
 - (viii) Heat, sprayburn, or sunburn;
 - (ix) Scale;
 - (x) Insects;
 - (xi) Other diseases; and,
 - (xii) Mechanical or other means.
- (4) Tolerances. (See § 51.2336):
- (c) "U.S. No. 2" consists of kiwifruit which meet the following requirements:

- (1) Basic Requirements:
 - (i) Similar varietal characteristics;
 - (ii) Mature;
 - (iii) Not soft, overripe, or shriveled;
 - (iv) Carefully packed;
 - (v) Fairly clean; and,
 - (vi) Not badly misshapen.
- (2) Free From:
 - (i) Worm holes;
 - (ii) Broken skins which are not healed;
 - (iii) Sunscald;
 - (iv) Freezing injury;
 - (v) Internal breakdown; and,
 - (vi) Decay.
- (3) Free From Serious Damage By:
 - (i) Bruises;
 - (ii) Leaf or limbrubs;
 - (iii) Discoloration;
 - (iv) Hail;
 - (v) Growth cracks;
 - (vi) Scab;
 - (vii) Scars;
 - (viii) Heat, sprayburn, or sunburn;
 - (ix) Scale;
 - (x) Insects;
 - (xi) Other diseases; and,
 - (xii) Mechanical or other means.
- (4) Tolerances. (See § 51.2336)

§ 51.2336 Tolerances.

In order to allow for variations incident to proper grading and handling, the following tolerances by count, shall be permitted in any lot:

- (a) U.S. Fancy and U.S. No. 1.

(1) For defects at shipping point.² 8 percent for fruit which fail to meet the requirements of the specified grade: *Provided*, That included in this amount not more than 4 percent shall be allowed for defects causing serious damage, including in this latter amount not more than 1 percent for fruit affected by internal breakdown or decay.

(2) For defects en route or at destination. 12 percent for fruit which fail to meet the requirements of the specified grade: *Provided*, That included

in this amount not more than the following percentages shall be allowed for defects:

- (i) 8 percent for permanent defects;
- (ii) 6 percent for defects causing serious damage, including therein not more than 4 percent for serious damage by permanent defects and not more than 2 percent for fruit affected by internal breakdown or decay.

- (b) U.S. No. 2

(1) For defects at shipping point.² 8 percent for fruit which fail to meet the requirements of this grade: *Provided*, That included in this amount not more than 4 percent shall be allowed for sunscald, insects, internal breakdown or decay, including in this latter amount not more than 1 percent for fruit affected by internal breakdown or decay.

(2) For defects en route or at destination. 12 percent for fruit which fail to meet the requirements of this grade: *Provided*, That included in this amount not more than the following percentages shall be allowed for defects:

- (i) 8 percent for permanent defects including therein not more than 4 percent for sunscald, or insects; and,
- (ii) 2 percent for internal breakdown or decay.

§ 51.2337 Application of tolerances.

The contents of individual containers in a lot, based on sample inspection, are subject to the following limitations:

- (a) A container may contain not more than double any specified tolerance except that at least two defective specimens may be permitted in any container: *Provided*, That the averages for the lot are within the tolerances specified for the grade.

§ 51.2338 Standard pack.

(a) Fruit shall be fairly uniform in size and shall be packed in boxes, flats, lugs, or cartons and arranged according to approved and recognized methods. Containers shall be well filled; contents tightly packed but not be excessively or unnecessarily bruised by overfilling or oversizing. Fruit in the shown face of the container shall be reasonably representative in size and quality of the contents.

(b) When packed in closed containers the size shall be indicated by marking the container with the numerical count.

- (c) Boxes, flats, lugs, or cartons:

(1) Fruit packed in containers with cell compartments, cardboard fillers or molded trays shall be of proper size for the cells, fillers, or molds in which they are packed, and conform to the marked count.

(2) In order to allow for variations incident to proper packing in other types of containers, for example, lugs, cartons,

or boxes, the number of fruit shall not vary more than two from the marked count.

(d) "Fairly uniform in size" means the fruit in any container may not vary more than ¼ inch (6.4 mm) in diameter.

(e) "Diameter" means the greatest dimension measured at right angles to a line from stem to blossom end.

(f) In order to allow for variations incident to proper sizing and packing, not more than 10 percent, by count, of containers in any lot may fail to meet these requirements.

§ 51.2339 Definitions.

"Similar varietal characteristics" means the fruit in any lot and container are similar in shape, color of skin and flesh.

"Mature" means the fruit has reached the stage of development which will ensure the proper completion of the ripening process. The minimum average soluble solids, unless otherwise specified, shall be not less than 6.5 percent.

"Clean" means the fruit is practically free from dirt, dust, or other foreign material.

"Fairly clean" means the fruit is reasonably free from dirt, dust, or other foreign material.

"Well formed" means the fruit has the shape characteristic of the variety and slight bumps or other roughness are permitted providing they do not detract from appearance.

"Fairly well formed" means the fruit has the shape characteristic of the variety but slight bumps or other roughness are permitted providing they do not materially detract from appearance.

"Badly misshapen" means the fruit is so decidedly deformed that its appearance is seriously affected.

"Carefully packed" means the fruit shows no evidence of rough handling.

"Injury" means any defect described in § 51.2340, or an equally objectionable variation of any one of these defects, any other defect, or any combination of defects, which more than slightly detracts from the appearance, or the edible or marketing quality.

"Damage" means any defect described in § 51.2340 or an equally objectionable variation of any one of these defects, any other defect, or any combination of defects, which materially detracts from the appearance, or the edible or marketing quality.

"Serious damage" means any defect described in § 51.2340 or an equally objectionable variation of any one of these defects, any other defect, or any combination of defects, which seriously

²Shipping point, as used in these standards, means the point of origin of the shipment in the producing area or at port of loading for ship stores or overseas shipment, or, in the case of shipments from outside the continental United States, the port of entry into the United States.

detracts from the appearance, or the edible or marketing quality.

"Permanent defects" means those which are not subject to change during

shipment or storage, for example, shape, scars, or growth cracks.

"Condition defects" means those defects which are subject to change

during shipment or storage, for example, decay, soft, shriveling, discoloration, or bruises.

§ 51.2340 Classification of defects.

Defects	Injury	Damage	Serious damage
Bruises.....	When any slight indentation of the fruit or discoloration of the flesh extends more than $\frac{1}{16}$ inch (1.6 mm) in depth.	When surface of fruit is indented and discoloration of the flesh extends deeper than $\frac{1}{8}$ inch (3.2 mm), or causing slight discoloration exceeding the area of a circle $\frac{1}{8}$ inch (9.5 mm) in diameter, or lesser bruises aggregating an area of a circle $\frac{1}{8}$ inch (9.5 mm) in diameter which materially detract from the appearance, edible or shipping quality.	When surface of the fruit is indented and discoloration of the flesh extends deeper than $\frac{1}{8}$ inch (6.4 mm), or causing discoloration exceeding the area of a circle $\frac{1}{8}$ inch (12.7 mm) in diameter, or lesser bruises which seriously detract from the appearance, edible or shipping quality.
Leaf or Limbbruises.....	When not smooth, or not light colored, or aggregating more than the area of a circle $\frac{1}{8}$ inch (9.5 mm) in diameter.	When not smooth, or not light colored, or aggregating more than the area of a circle $\frac{1}{8}$ inch (12.7 mm) in diameter.	When smooth and light colored and aggregating more than the area of a circle 1- $\frac{1}{2}$ inches (38.1 mm) in diameter, or dark or slightly rough and barklike scars aggregating more than the area of a circle $\frac{1}{8}$ inch (19.1 mm) in diameter.
Discoloration.....	When color and pattern causes a distinct noticeable appearance (except for water staining) affecting more than 5% of surface.	When color and pattern causes an unattractive appearance (except for water staining) affecting more than 10% of surface.	When color and pattern causes a distinct unattractive appearance (except for water staining) affecting more than 25% of surface.
Hail Injury.....	When unhealed or deep, or aggregating more than the area of a circle $\frac{1}{8}$ inch (1.6 mm) in diameter.	When unhealed or deep, or aggregating more than the area of a circle $\frac{1}{8}$ inch (6.4 mm) in diameter.	When unhealed or deep, or aggregating more than the area of a circle $\frac{1}{8}$ inch (12.7 mm) in diameter.
Growth Cracks.....	When not healed, or more than one in number, or more than $\frac{1}{8}$ inch (3.2 mm) in length or depth.	When not healed, or more than one in number, or more than $\frac{1}{8}$ inch (3.2 mm) in depth, or more than $\frac{1}{8}$ inch (9.5 mm) in length if within the stem cavity, or more than $\frac{1}{8}$ inch (6.4 mm) in length if outside the stem cavity.	When not healed and more than $\frac{1}{8}$ inch (3.2 mm) in length or depth, or healed and more than $\frac{1}{8}$ inch (4.8 mm) in depth, or healed and aggregating more than $\frac{1}{8}$ inch (15.9 mm) in length if within the stem cavity, or healed and aggregating more than $\frac{1}{8}$ inch (12.7 mm) in length if outside the stem cavity.
Scab.....	When cracked, or the aggregate area exceeds that of a circle $\frac{1}{8}$ inch (3.2 mm) in diameter.	When cracked, or the aggregate area exceeds that of a circle $\frac{1}{8}$ inch (6.4 mm) in diameter.	When the aggregate area exceeds that of a circle $\frac{1}{8}$ inch (12.7 mm) in diameter.
Scars.....	When not smooth, or surface of the fruit is depressed more than $\frac{1}{16}$ inch (.8 mm), or not light in color, or when exceeding any of the following aggregate areas, or a combination of two or more types of scars, the seriousness of which exceeds the maximum allowed for any one type: (1) Dark or rough scars when the area exceeds that of a circle $\frac{1}{8}$ inch (3.2 mm) in diameter; (2) Fairly light colored, fairly smooth scars when the area exceeds that of a circle $\frac{1}{8}$ inch (6.4 mm) in diameter; (3) Light colored, smooth scars when the area exceeds that of a circle $\frac{1}{8}$ inch (12.7 mm) in diameter.	When not smooth, or surface of the fruit is depressed more than $\frac{1}{16}$ inch (1.6 mm), or when exceeding any of the following aggregate areas, or a combination of two or more types of scars, the seriousness of which exceeds the maximum allowed for any one type: (1) Dark or rough scars when the area exceeds that of a circle $\frac{1}{8}$ inch (6.4 mm) in diameter; (2) Fairly light colored, fairly smooth scars when the area exceeds that of a circle $\frac{1}{8}$ inch (12.7 mm) in diameter; (3) Light colored, smooth scars when the area exceeds that of a circle $\frac{1}{8}$ inch (19.1 mm) in diameter.	When the surface of the fruit is depressed more than $\frac{1}{16}$ inch (.8 mm), or when exceeding any of the following aggregate areas, or a combination of two or more types of scars, the seriousness of which exceeds the maximum allowed for any one type: (1) Dark or rough scars when the area exceeds that of a circle $\frac{1}{8}$ inch (19.1 mm) in diameter; (2) Not dark or rough when the area exceeds one-fourth of the fruit surface.
Heat, Sprayburn and Sunburn.	When the normal color of the skin or flesh is more than slightly changed, or any indentation is present.	When the skin is blistered, cracked or decidedly flattened, or the normal color of the skin or flesh has materially changed, or more than one indentation, or indentation exceeds $\frac{1}{16}$ inch (4.8 mm) in diameter.	When the skin is blistered, cracked or decidedly flattened, or causing any dark discoloration of the flesh, or more than two indentations are present, or the aggregate area of indentations exceeds that of a circle $\frac{1}{8}$ inch (9.5 mm) in diameter, or when causing a noticeable brownish or darker discoloration over more than one-fourth of surface.
Scale or Scale Marks.	When more than one large scale or scale mark or more than three scales or scale marks of any size are present.	When the aggregate area exceeds that of a circle $\frac{1}{8}$ inch (6.4 mm) in diameter.	When the aggregate area exceeds that of a circle $\frac{1}{8}$ inch (9.5 mm) in diameter.
Insects.....	When feeding injury is evident on fruit or any insect is present in fruit.	When feeding injury materially detracts from appearance or any insect is present in fruit.	When feeding injury seriously detracts from appearance or any insect is present in fruit.

Classification of defects guidelines are based on fruit 2 inches or smaller in diameter. Accordingly, larger fruit are permitted to have defects relative to their size.

(Agricultural Marketing Act of 1946, Secs. 203, 205, 60 Stat. 1087, as amended, 1090 as amended (7 U.S.C. 1622, 1624))

Done at Washington, D.C. on: August 4, 1982.

Eddie F. Kimbrell,

Deputy Administrator, Commodity Services.

[FR Doc. 82-21637 Filed 8-9-82; 8:45 am]

BILLING CODE 3410-02-M

Federal Grain Inspection Service

7 CFR Part 68

Miscellaneous Reference Changes

AGENCY: Federal Grain Inspection Service¹, USDA.

¹ Authority to exercise the functions of the Secretary of Agriculture contained in the Agricultural Marketing Act of 1946, as amended, (7 U.S.C. 1621-1627) concerning inspection and standardization activities related to grain and similar commodities and products thereof has been delegated to the Administrator, Federal Grain Inspection Service (7 U.S.C. 75a, 7 CFR 68.2(e)).

ACTION. Final rule.

SUMMARY: The Federal Grain Inspection Service (FGIS) is amending references in certain sections of this Part to reflect changes in organizational structure and responsibility, changes in titles of FGIS handbooks, and deletion of other related obsolete information.

EFFECTIVE DATE: September 9, 1982.

FOR FURTHER INFORMATION CONTACT:

Lewis Lebakken, Jr., Regulations and Directives Unit, Resources Management Division, FGIS, USDA, Room 1636 South Building, 1400 Independence Avenue,

S.W., Washington, D.C. 20250, telephone (202) 382-0231.

SUPPLEMENTARY INFORMATION: This final action updates references in the regulations to reflect changes in organizational structure and responsibility, titles of FGIS handbooks, and deletion of other related obsolete information. For this reason the administrative procedure provisions of the Administrative Procedures Act (5 U.S.C. 533), the Secretary's Memorandum 1512-1, Executive Order 12291, and the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) do not apply.

The Federal Grain Inspection Service was established by the United States Grain Standards Act, as amended (USGSA) (7 U.S.C. 71 *et seq.*) effective November 20, 1976. As authorized by Section 3A of the USGSA (7 U.S.C. 75a), the Secretary of Agriculture delegated to the Administrator of FGIS, authority to perform functions under the Agricultural Marketing Act of 1946 (AMA), in addition to responsibilities under the USGSA. As a result of this delegation, changes as to references in the applicable sections of the Part 68 (7 CFR Part 68) regulations under the AMA are being made to reflect the transfer of responsibility from the Agricultural Marketing Service (AMS) to FGIS. In some instances references to AMS had been deleted by previous rulemaking and references to FGIS included. However, because FGIS has been reorganized, some changes are necessary in the title of the applicable divisions responsible for implementation of the Part 68 regulations, and a reference to regional offices, which no longer exist, has been deleted. Other changes include deletion of reference to Service and Regulatory Announcements not used by FGIS, deletion of effective dates of various handbooks because they are routinely updated and revised, and changes to reflect current titles of handbooks.

List of Subjects in 7 CFR Part 68

Administrative practices and procedures-FGIS, Agricultural commodities, Export.

PART 68—REGULATIONS AND STANDARDS FOR INSPECTION AND CERTIFICATION OF CERTAIN AGRICULTURAL COMMODITIES AND PRODUCTS THEREOF

Accordingly, various sections of the Part 68 regulations under the Agricultural Marketing Act of 1946, as amended, are revised or amended as follows:

Subpart A—Regulations

§ 68.2 [Amended]

1. 7 CFR 68.2(f) is amended by removing the words "Inspection Division" and inserting, in their place, the words "Field Management Division."

§§ 68.2 and 68.43 [Amended]

2. 7 CFR 68.2 and 7 CFR 68.43 are amended by removing the words "Inspection Division" and inserting, in their place, the word "Division" in the following places:

- (a) 7 CFR 68.2(u)
- (b) 7 CFR 68.43 (a)(2), (a)(3), and (a)(4).

§ 68.14 [Amended]

3. 7 CFR 68.14(f)(1)(iv) is amended by removing the words "and a copy of each document is on file in the Regional Office."

§ 68.49 [Amended]

4. 7 CFR 68.49 is amended by removing the words "the Service and Regulatory Announcements of the Federal Grain Inspection Service."

Subpart B—U.S. Standards for Beans

§ 68.132 [Amended]

1. 7 CFR 68.132 is amended by removing the words "Agricultural Marketing Service" and inserting, in their place, the words "Federal Grain Inspection Service."

Subpart C—United States Standards for Rough Rice

Subpart D—U.S. Standards for Brown Rice for Processing

Subpart E—United States Standards for Milled Rice

§§ 68.204 and 68.254 [Amended]

1. 7 CFR 68.204 and 7 CFR 68.254 are amended by removing the words "Inspection Division" and inserting, in their place, the words "Federal Grain Inspection Service."

§§ 68.202, 68.203, 68.207, 68.252, 68.253, 68.255, and 68.258 [Amended]

2. 7 CFR Part 68 is further amended by removing the words "Inspection Handbook HB 918-11" and inserting, in their place, the words "the Rice Inspection Handbook" in the following sections:

- (a) 7 CFR 68.202(m)
- (b) 7 CFR 68.203 (lines 21 and 22, and lines 28 and 29)
- (c) 7 CFR 68.207
- (d) 7 CFR 68.252(o)
- (e) 7 CFR 68.253
- (f) 7 CFR 68.255
- (g) 7 CFR 68.258.

§§ 68.208, 68.259, 68.302, 68.303, 68.305, and 68.308 [Amended]

3. 7 CFR Part 68 is further amended by removing the words "Inspection Handbook HB 918-11" and inserting, in their place, the words "Rice Inspection Handbook" in the following sections:

- (a) 7 CFR 68.208
- (b) 7 CFR 68.259
- (c) 7 CFR 68.302(m)
- (d) 7 CFR 68.303
- (e) 7 CFR 68.305
- (f) 7 CFR 68.308.

Footnote No. 2 [Revised]

4. Footnote No. 2, applicable to 7 CFR 68.202(m), 7 CFR 68.203, 7 CFR 68.207, 7

CFR 68.208, 7 CFR 68.252(o), 7 CFR 68.253, 7 CFR 68.255, 7 CFR 68.258, 7 CFR 68.259, 7 CFR 68.302(m), 7 CFR 68.303, 7 CFR 68.305, and 7 CFR 68.308, is revised wherever it appears, to read as follows:

"Publications referenced in these standards will be made available upon request to the Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250."

Footnote No. 3 [Amended]

5. Footnote No. 3, applicable to 7 CFR 68.203, 7 CFR 68.207, 7 CFR 68.208, and 7 CFR 68.308, is amended wherever it appears by removing the words "Standardization Division."

§§ 68.205, 68.256, and 68.306 [Amended]

6. 7 CFR 68.205, 7 CFR 68.256, and 7 CFR 68.306 are amended by removing the words "Standardization Division."

Subpart F—United States Standards for Whole Dry Peas

Subpart G—United Standards for Split Peas

Subpart H—United States Standards for Lentils

§ 68.402 [Amended]

1. 7 CFR 68.402(f) and (1) are amended by removing the word "Manual" and inserting, in its place, the word "Handbook."

Footnote No. 2 [Revised]

2. Footnote No. 2, applicable to 7 CFR 68.402(f) and (1), is revised to read as follows:

"Publications referenced in these standards will be made available upon request to the Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250."

Footnote No. 3 [Amended]

3. Footnote No. 3, applicable to sections 68.402(f) and 68.402(1) is amended by removing the words "Grain Division, Agricultural Marketing Service, U.S. Department of Agriculture, 6525 Belcrest Road, Hyattsville, Maryland 20782" and inserting, in their place, the words "Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250."

§§ 68.402, 68.504, 68.604, and 68.611 [Amended]

4. 7 CFR Part 68 is further amended by removing the words "Inspection Handbook HB-1" and inserting in their place, the words "the Inspection

Handbook for Dry Peas, Split Peas, and Lentils" in the following places:

- (a) 7 CFR 68.402(f) and (1)
- (b) 7 CFR 68.504
- (c) 7 CFR 68.604
- (d) 7 CFR 68.611.

§ 68.404 [Amended]

5. 7 CFR 68.404 is amended by removing the words "Grain Division" and inserting in their place, the words "Federal Grain Inspection Service."

§ 68.406 [Amended]

6. 7 CFR 68.406, Footnote No. 5, is amended by removing the words "Chapter 3 of the Inspection Handbook HB-1.2" and inserting, in their place, the words "the Inspection Handbook for Dry Peas, Split Peas, and Lentils."

§§ 68.503 and 68.603 [Amended]

7. 7 CFR 68.503 and 7 CFR 68.603 are amended by removing the words "Equipment Manual, GR Instruction 916-6" and inserting in their place, the words "Equipment Handbook."

§ 68.601 [Amended]

8. 7 CFR 68.601(d) is amended by removing the words "Inspection Handbook" and inserting, in their place, the words "Inspection Handbook for Dry Peas, Split Peas, and Lentils."

§§ 68.505 and 68.605 [Amended]

9. 7 CFR 68.505 and 7 CFR 68.605 are amended by removing the words "Grain Division, Agricultural Marketing Service" and inserting in their place, the words "Federal Grain Inspection Service."

10. 7 CFR 68.506 and 7 CFR 68.606 are revised to read as follows:

§ 68.506 References.

§ 68.606 References.

The following publications are referenced in these standards and copies will be made available upon request to the Federal Grain Inspection Service, U.S. Department of Agriculture.

(a) Equipment Handbook, U.S. Department of Agriculture, Federal Grain Inspection Service.

(b) Inspection Handbook for Dry Peas, Split Peas and Lentils, U.S. Department of Agriculture, Federal Grain Inspection Service.

(Secs. 203, 205, 60 Stat. 1087, 1090, as amended (7 U.S.C. 1622-1624))

Dated: August 4, 1982.

Kenneth A. Gilles,
Administrator.

[FR Doc. 82-21742 Filed 8-9-82; 8:45 am]

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DEPARTMENT OF ENERGY

Office of Conservation and Renewable Energy

10 CFR Part 430

[Docket No. CAS-RM-80-118]

Energy Conservation Program for Consumer Products Test Procedures for Refrigerators and Refrigerator-Freezers, and Freezers

AGENCY: Office of Conservation and Renewable Energy, DOE.

ACTION: Final rule

SUMMARY: The Department of Energy amends its test procedures for refrigerators and refrigerator-freezers, and freezers to lessen the test burden associated with the testing procedures. Test procedures are part of the energy conservation program for consumer products established pursuant to the Energy Policy and Conservation Act, as amended by the National Energy Conservation Policy Act. Among other program elements, the legislation requires that standard methods of testing be prescribed for covered products.

EFFECTIVE DATE: September 9, 1982.

FOR FURTHER INFORMATION CONTACT: Thomas S. Gutmann, U.S. Department of Energy, Office of Conservation and Renewable Energy, Mail Station CE-113.1, 1000 Independence Avenue, S.W., Washington, D.C. 20585, (202) 252-9127

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SUPPLEMENTARY INFORMATION:

A. Background

On October 1, 1977, the Department of Energy (DOE) assumed the authority of the Federal Energy Administration (FEA) for the Energy Conservation Program for Consumer Products under Section 301 of the Department of Energy Organization Act. (Pub. L. 95-91). The Energy Conservation Program for Consumer Products was established by FEA pursuant to Title III, Part B of the Energy Policy and Conservation Act (EPCA). (Pub. L. 94-163, 89 Stat. 917). Subsequently, EPCA was amended by the National Energy Conservation Policy Act (NECPA). (Pub. L. 95-619, 92 Stat. 3266). References in this notice to "the Act" or to sections of the Act, refer to EPCA, as amended by NECPA.

The Act requires DOE to prescribe standardized test procedures to measure

the energy consumption of certain refrigerators and refrigerator-freezers, and freezers. Test procedures were proposed for refrigerators and refrigerator-freezers, and freezers by notice issued April 21, 1977. (42 FR 21576, April 27, 1977). A public hearing on the proposed test procedures was held on June 14, 1977. Final test procedures were prescribed on September 8, 1977. (42 FR 46140, September 14, 1977).

Subsequently, a Petition for Rulemaking was submitted by the Association of Home Appliance Manufacturers (AHAM). This petition requested that DOE examine shortened test procedures for refrigerators and refrigerator-freezers, and freezers. AHAM stated that the alternate test procedures being proposed were much less burdensome and would give results that would differ by less than four percent from those obtained under the existing DOE testing program. Upon the request of DOE, the National Bureau of Standards (NBS) experimentally evaluated the alternate test procedures suggested by AHAM. After study, NBS recommended to DOE revised test procedures which incorporated many of the AHAM suggestions. On July 14, 1980, DOE proposed these revised test procedures as an amendment to the existing procedures. (45 FR 47396).

Information received by DOE during the public hearing on September 9, 1980, and in written comments in response to the July 14 proposal revealed certain inadequacies with the definition of steady state conditions and with the requirements for the test chamber ambient air temperature gradient. Insufficient information was available in the rulemaking record to address these areas satisfactorily. Therefore, on October 14, 1981, DOE proposed an amended version of the revised test procedures (46 FR 50544) which addressed these deficiencies. No public hearing was held. Corrections of an editorial nature to the proposed rule were published December 17, 1981. (46 FR 61485).

B. Discussion

1. *All-Refrigerator.* The "all-refrigerator" is a relatively new refrigerator product available in the marketplace. All-refrigerators are characterized by either a freezer compartment sized for only a very small load or the lack of a freezer compartment altogether. The freezer compartments of all-refrigerators so equipped are designed to maintain a temperature only slightly below 32°F (0°C). As a result, they are suitable only

for making and storing ice cubes or the short term storage of frozen food. Currently, under the existing test procedure, this product falls under the definition of a refrigerator.

Recognizing that the utility of an all-refrigerator is associated almost solely with its fresh food storage capability, DOE and NBS determined that the existing test procedures are not appropriate for this product. DOE and NBS found that the energy consumption of an all-refrigerator should be based on the fresh food compartment temperature and not the freezer compartment temperature as the current test procedures require.

(a) *Definition.* The July 14, 1980, proposed rule defined an all-refrigerator as a refrigerator with either no freezer compartment or one with a capacity no greater than 0.25 cubic feet. A manufacturer requested that this definition be changed to include models with freezer compartment capacities of up to 0.30 cubic feet. The company manufactures a refrigerator with a freezer compartment capacity greater than 0.25 cubic feet but less than 0.30 cubic feet. The commenter remarked that even the freezer compartment of this unit is still too small to permit a proper arrangement of frozen food packages as a test load. (The existing test procedures require that all-refrigerators since they are classified as refrigerators be tested with a load of frozen food packages in the freezer compartment.) Another commenter similarly was concerned with the difficulty of arranging a load of frozen food packages in the freezer compartment of an all-refrigerator. This commenter requested that all-refrigerators be tested with no load in the freezer compartment.

NBS analyzed these comments and concluded that the small size and differing configurations of all-refrigerator freezer compartments make specifying the amount and location of a load of frozen food packages subject to varying interpretations. This could lead to interlaboratory test repeatability problems that would be contrary to the purpose of a standard test procedure. Further, NBS determined that freezer compartments of 0.50 cubic feet capacity or less would not offer sufficient space to permit the proper arrangement of a test load.

Thus, the definition included in the October 14, 1981 proposal specified an all-refrigerator as a refrigerator with either no freezer compartment or one with a capacity of 0.50 cubic feet or less. This proposed rule further specified that all-refrigerators be tested without a test load in the freezer compartment.

Today's final rule includes these provisions.

(b) *Determination of Energy Consumption Based on Fresh Food Compartment Temperature.* Since the temperature in the freezer compartment of an all-refrigerator is not a critical operating parameter, the July 14, 1980 proposal called for the determination of energy consumption to be based on the temperature in the fresh food compartment. The "standardized" fresh food compartment temperature, proposed on July 14, 1980, was 38°F (3.3°C). The July 14 notice also proposed that no temperature measurements be made in the freezer compartment. No comments were received regarding the proposed changes. Today's final rule incorporates these changes. The provisions for testing all-refrigerators are the same as those for testing single control device refrigerators (described in Section 2, *infra*) with the exception that only fresh food compartment temperature is used in determining per cycle energy consumption.

(c) *Calculation of Adjusted Total Volume.* While the July 14, 1980, proposal broke out all-refrigerators as a type of refrigerator, it did not provide for calculating the adjusted total volume of an all-refrigerator differently from that of a refrigerator. Adjusted total volume is a measure of useful output of services for refrigerators and refrigerator-freezers, and freezers and is necessary for computing Energy Factor (EF), the measure of the overall efficiency of the product. The adjusted total volume is divided by the per cycle energy consumption of the unit to determine the EF. (Per cycle energy consumption is a calculated value equivalent to the amount of energy that would be consumed by a unit over a 24 hour period.) After actual freezer compartment and fresh food compartment volume have been determined, the adjusted total volume of the unit is calculated by multiplying the freezer compartment volume by an adjustment factor and adding the result to the fresh food compartment volume.

Included in the July 14 comments relating to all-refrigerators were recommendations to change the adjustment factor from 1.44 (as provided for refrigerators) to either 1.12 or 1.0. The 1.12 factor was based on the assumption that all-refrigerator freezer compartments would be at a temperature of 32°F (0°C) when the fresh food compartment temperature was 38°F (3.3°C). The adjustment factor of 1.0 was recommended on the basis that the volume of the freezer compartment of an all-refrigerator, being small and of limited utility, should not be "adjusted."

In other words, this commenter recommended that the adjusted total volume of an all-refrigerator be equal to its actual total volume. DOE had no information to substantiate either claim. Lacking such data and considering that use of a 1.12 adjustment factor instead of a 1.0 adjustment factor will make a difference of only 0.06 cubic feet at the most in the adjusted total volume of an all-refrigerator, DOE believed that the adjustment factor should be 1.0. Thus, this value was proposed in the October 14, 1981, notice as the adjustment factor for calculating the adjusted total volume of an all-refrigerator. No comments were received in response to the October 14 proposal relating to this issue. Today's final rule prescribes an adjustment factor of 1.0 for calculating the adjusted total volume of an all-refrigerator.

(d) *Calculation of Per Cycle Energy Consumption.* Equations for calculating per cycle energy consumption are included in today's final rule. These equations replace the graphical evaluation process of the existing procedure. When straight lines are used to connect test data points, the equations mathematically determine energy use in exactly the same way as does a graphical procedure. In many cases, industry members already calculate these energy values because the calculated results are more accurate, less time consuming, and easily done with simple computers or calculators. For all-refrigerators, per cycle energy consumption is calculated by using one of the two formulas found in section 6.2.1 of Appendix A1. If the fresh food compartment temperature cannot be set at or above 38°F (3.3°C), the first formula selects the lowest actual test-measured energy consumption value. In all other cases, per cycle energy consumption is calculated as if the fresh food compartment were at 38°F (3.3°C).

2. *Single Control Refrigerators and Refrigerator-Freezers, and Freezers.* The existing DOE test procedures for refrigerators and refrigerator-freezers, and freezers with single temperature control devices specify that the units be tested at the warmest, midpoint, and coldest temperature positions of the control device. AHAM proposed that an alternate test procedure be allowed which requires that the units be tested at two rather than three control settings. AHAM proposed that one test be conducted by selecting a temperature control position such that the freezer compartment temperature falls within 3°F (1.7°C) above the standardized freezer compartment temperature. The other test is conducted with the freezer compartment temperature within 3°F

(1.7°C) below the standardized freezer compartment temperature.

DOE and NBS analyzed this proposal and found it an acceptable test method with the exception of the test point temperature specification. DOE and NBS determined that a test which requires such precise adjustment of the temperature control could potentially be as burdensome as the existing procedure which requires three test points. Typically, temperature control devices on refrigerators and refrigerator-freezers, and freezers are not graduated in degrees of temperature and, further, are not precisely calibrated such that the same compartment temperature is attained when units of the same basic model are operated with their temperature control knobs at identical settings. It might take several attempts at temperature control knob adjustment before a compartment temperature within 3°F (1.7°C) above the standardized temperature is attained; similarly, it might take several attempts to attain a compartment temperature within 3°F (1.7°C) below the standardized temperature. Since it could take several hours or more for a unit to achieve steady state conditions each time its temperature control knob is adjusted to a new setting, misadjustment of the knob could lead to costly testing delays. Because of the potential for testing delays, this test point temperature specification has not been adopted.

The test procedures prescribed today require that single control products be tested at two temperature control settings. The procedure requires a first set of energy consumption and compartment temperature test values to be measured with the temperature control set at the midpoint of the control range and a second set of energy consumption and compartment temperature test values be measured with the control set either at the warmest or the coldest setting so that the freezer compartment temperatures bound, i.e., one is above and one is below, the standardized freezer compartment temperature.¹ If the unit has an anti-sweat heater switch, this procedure is performed twice, with the switch set first in one and then in the other position.

Energy consumption values and freezer compartment temperature values are then used to calculate per cycle energy consumption at the standardized freezer compartment temperature. For refrigerators and refrigerator-freezers, a

second calculation is made using the energy consumption values and the fresh food compartment temperature values to determine per cycle energy consumption at 45°F (7.2°C) in the fresh food compartment. The higher of the two per cycle energy consumption values calculated is taken as the per cycle energy consumption of the unit tested.

In reviewing the July 14 proposal, NBS identified two special cases of product performance where the above described test procedures should not apply. Although the likelihood of these cases occurring is small, the October 14, 1981, proposal included provisions to accommodate them.

The first case would be a product for which the freezer compartment temperature cannot be set above the standardized temperature and, in the case of refrigerators and refrigerator-freezers (excluding all-refrigerators), the fresh food compartment temperature cannot be set above 45°F (7.2°C). Today's final rules stipulates that, in this case, the per cycle energy consumption of the unit shall be determined by testing the unit with all temperature controls set at their warmest position. Today's final rule also incorporates an alternate test method that allows the first test to be run with all controls set at their warmest position. If this test results in a freezer compartment temperature below the standardized temperature, and a fresh food compartment temperature below 45°F (7.2°C), no further testing is required. The per cycle energy consumption of the unit tested is calculated from the results of this one test.

The second case would be a product for which the freezer compartment temperature cannot be set below the standardized temperature. This condition would usually characterize a product with an underdesigned refrigeration system. For such a product, the compartment temperature and energy consumption test values measured with all temperature controls at their midpoint setting can be nearly equal to those values measured with all controls at their coldest setting since the compressor could be running almost constantly at both settings. If per cycle energy consumption were to be determined by extrapolating the results of these two test points, small variations in the test results within the tolerance of the test procedure could result in large errors in the extrapolated result. Consequently, in order to improve accuracy, testing at the two extreme control settings is required by today's final rule in cases where a freezer compartment temperature below the

standardized temperature cannot be achieved. Today's final rule also incorporates an alternate test method that allows first test to be run with all controls set at their coldest position. If this test results in a freezer compartment temperature above the standardized temperature, a second test is run with all controls set at their warmest position. These two tests will permit calculation of per cycle energy consumption.

(a) *Calculation of Per Cycle Energy Consumption.* Equations for calculating per cycle energy consumption are included in today's final rule. These equations replace the graphical evaluation process of the existing procedure.

For refrigerators and refrigerator-freezers (excluding all-refrigerators), per cycle energy consumption is calculated by using one of three formulas described in section 6.2.2 of Appendix A1. If the fresh food compartment temperature cannot be set at or above 45°F (7.2°C) and the freezer compartment cannot be set at or above its standardized temperature (15°F (-9.4°C) for refrigerators, excluding all-refrigerators, and 5°F (-15°C) for refrigerator-freezers) with any control setting, the first formula selects the lowest actual test-measured energy consumption. In all other cases, per cycle energy consumption is calculated using two formulas, one of which determines energy consumption as if the fresh food compartment were at 45°F (7.2°C) and the other which determines energy consumption as if the freezer compartment were at its standardized temperature. These conditions may or may not be attainable in a particular test unit. If not attainable, the formula extends the line passing through the two actual measured conditions so that per cycle energy consumption may be calculated for both of these conditions. The reported value of per cycle energy consumption is then selected as the higher of the two calculated values.

For freezers, per cycle energy consumption is calculated by using one of the two formulas found in section 6.2 of Appendix B1. If the compartment temperature cannot be set at or above 0.0°F (-18°C), the first formula selects the lowest actual test-measured energy consumption value. In all other cases, per cycle energy consumption is calculated as if the compartment were at 0.0°F (-18°C).

3. *Multiple Control Refrigerator-Freezers.* The existing DOE test procedures require that multiple control refrigerators and refrigerator-freezers, those with a freezer compartment

¹ In the case of an all-refrigerator, it is the fresh food compartment temperature that is used in the determination of per cycle energy consumption.

temperature control and a fresh food compartment temperature control, be tested four times; once at each of the combinations of the extreme position settings of the controls (warm/warm, warm/cold, cold/warm, and cold/cold). The test values obtained are: the average freezer compartment temperature, the average fresh food compartment temperature and the energy consumed during the test. If the unit has an anti-sweat heater switch, it must be tested another four times with the switch set in its other position.

Under existing procedures, the first step in determining per cycle energy consumption after testing is completed is to plot two graphs, one above the other. The lower graph is a plot of freezer compartment temperature test values versus fresh food compartment temperature test values. The upper graph is a plot of energy consumption test values versus fresh food compartment temperature test values. (The axes of the two graphs are oriented such that the freezer compartment temperature axis (lower graph) and the energy consumption axis (upper graph) lie on the same vertical line.)

The freezer compartment and fresh food compartment temperature values of each test become the coordinates of the points to be plotted on the freezer compartment temperature versus fresh food compartment temperature graph. Once plotted, these four points are connected by four straight lines to form a quadrilateral figure or envelope. (These lines denote the boundaries of attainable freezer compartment and fresh food compartment temperatures for all possible combinations of settings of the temperature controls.) A horizontal line is then drawn through the envelope at the appropriate standardized freezer compartment temperature for the product being tested (15°F (-9.4°C) for refrigerators, excluding all-refrigerators, and 5°F (-15°C) for refrigerator-freezers). The two points where this line intersects the boundary of the envelope represent the lowest and highest fresh food compartment temperatures attainable with the freezer compartment at the standardized temperature.

The next step in the determination of per cycle energy consumption is to plot the energy consumption values from each test as a point on the energy consumption versus fresh food compartment temperature graph. These four points are connected by four straight lines to form an energy use envelope. Vertical lines are projected upwards from the two points on the lower graph, that represent the highest

and lowest fresh food compartment temperatures attainable with the freezer compartment at the standardized temperature, to intersect the corresponding boundary lines of the energy use envelope in the upper graph. These two points of intersection correspond to the maximum and minimum energy consumption values associated with the freezer compartment at the standardized temperature. The average of these two values is taken as the per cycle energy consumption value.

AHAM petitioned that a two point test rather than the existing four point test be used for testing multiple control automatic defrost refrigerator-freezers. In accordance with the AHAM proposal, a first test shall be conducted with each temperatures control set at the midpoint of its range (mid/mid). Fresh food and freezer compartment temperature and energy consumption are to be measured. If the midpoint control positions (mid/mid) result in an average freezer compartment temperature greater than 5°F (-15°C), the standardized freezer compartment temperature for a refrigerator-freezer, the controls are to be reset to their coldest positions (cold/cold) for the second test. If the midpoint controls positions (mid/mid) result in an average freezer compartment temperature less than 5°F (-15°C), the control are to be reset to their warmest positions (warm/warm) for the second test. The resulting compartment temperature test values and the energy consumption test values are plotted on a graph and the per cycle energy consumption of the unit is determined at the 5°F (-15°C), standardized freezer compartment temperature. AHAM contended that the results of the two point test would differ but slightly from the results of the four point test run on the same units.

DOE and NBS carefully analyzed this request for a change in the test procedure and find it an acceptable approach that will reduce the burdensomeness of the testing process. On the freezer compartment temperature versus fresh food compartment temperature graph used in the current procedure, a midpoint setting of the temperature controls (mid/mid) as AHAM proposed, would produce a point on the graph located near the center of the envelope previously described. A line can be drawn from this mid/mid setting data point to either the cold/cold setting data point or the warm/warm setting data point which will cross a horizontal line corresponding to a freezer compartment temperature of 5°F (-15°C). The point of intersection of these two lines will be about half way

between the earlier described maximum and minimum fresh food compartment temperature values with the freezers compartment at 5°F (-15°C). Similarly, a mid/mid setting data point will produce a point near the center of the four point energy use envelope on the energy consumption versus fresh food compartment temperature graph. By projecting a vertical line upward from the 5°F (-15°C) freezer compartment temperature intersection point on the lower graph to intersect a line connecting the mid/mid setting data point and the cold/cold or the warm/warm setting data point on the upper graph, the energy that the unit would consume to attain this temperature can be found.

In analyzing the AHAM proposal, NBS determined that the approach of conducting a two point test instead of a four point test could be applied to all multiple control refrigerators and refrigerator-freezers and was not just applicable to multiple control automatic defrost refrigerator-freezers. NBS confirmed that both the graphical and the mathematical method for determining per cycle energy consumption using only two tests gave test results which varied no more than four percent from the existing test procedure. Part of this variation may be due to inaccuracies in setting the mid/mid position on controls that have widely separated control setting markings. Some of these controls also have detents at these markings that can result in large differences between the midpoint setting and the nearest marked or detent setting. Consequently, today's final rule prescribes a two-point test for multiple control refrigerators and refrigerator-freezers but requires that the controls be set at the midpoint of their range for testing even if detents have to be mechanically overridden. Also, the provisions for calculating per cycle energy consumption and for accommodating special cases of product performance discussed in the preceding section dealing with single control device products are applicable here.

One industry member submitted data to NBS which indicated that a two point test procedure using the cold/cold and warm/warm settings rather than a mid/mid setting would produce more consistent results with less deviation from test to test. DOE and NBS believe that this conclusion need not apply for all manufacturers.

4. Freezer Compartment Load in Automatic Defrost Refrigerator-Freezers. The existing DOE test procedures specify that refrigerators and refrigerator-freezers be tested with the

freezer compartment loaded to 75 percent of its capacity with frozen food packages. AHAM proposed that the test procedures be revised to permit testing of automatic defrost refrigerator-freezers under the following conditions:

- a. No thermal load in the freezer compartment,
- b. Freezer compartment temperature to be measured using weighted thermocouples as specified in American National Standard Institute (ANSI) Standard B-38.1-1970, and
- c. Freezer compartment thermocouples to be located in positions previously occupied by the packaged test load.

NBS carefully analyzed the AHAM-suggested procedure. The provision for no load in the freezer is a change from the existing test procedure which specifies no load in the fresh food compartment and a 75 percent freezer compartment load of standard sized packages of frozen food. The change was requested by industry to reduce the burdensomeness of the test related to selecting and maintaining the packages, constantly relocating them, arranging them in the freezer compartment of the unit under test, and assuring that the imbedded thermocouples are correctly positioned. The load increases the length of time a test takes since a large thermal mass requires considerable time to reach equilibrium conditions. Industry submitted data to support their contention that there is no appreciable difference in the results of tests conducted with and without a freezer compartment load. It was noted that the Canadian Standards Association has been testing freezers without a thermal load and has obtained results equivalent to those from the existing DOE test procedure. NBS ran tests on automatic defrost refrigerator-freezers both with and without loads to assess the acceptability of the proposal. The NBS tests showed that as the load is presently specified, many different arrangements of the frozen food packages can result when identical automatic defrost refrigerator-freezer freezer compartments are loaded by different persons. The exact placement of each package cannot be specified due to the variety of freezer compartment configurations of today's refrigerator-freezer models. The placement of the first few food packages affects the final arrangement of the remaining packages, the location of the thermocouples, and the total number of packages finally placed in the compartment. Consequently, the specified 75 percent load is actually a variable.

NBS also found that air circulation around the packages is a very important

parameter. An air gap of $\frac{1}{2}$ to $1\frac{1}{2}$ inches (1.5 to 4 cm) between the packages and the freezer walls is specified in the existing test procedure and the use of insulating spaces is permitted to maintain this gap. Even with spacers, it is very difficult to arrange the load packages in a manner such that the gap is maintained. Also, normal vibrations such as those caused by the compressor motor starting and stopping can cause the food packages to shift position and the air gap to change. NBS concluded that tests with and without a load in the freezer compartment will produce essentially the same test results if the load is arranged according to specifications. Blocking any of the air gaps affects the results by producing different energy usage figures. The elimination of the test load should not only reduce the burdensomeness of the test but should also provide a more repeatable test. Consequently, today's final rule does not require a load in the compartment of automatic defrost refrigerator-freezers.

As a result of this change, the existing method of measuring freezer compartment temperature had to be modified since the temperature sensors are specified to be located in the load packages. AHAM requested that freezer temperatures be measured in accordance with an existing industry method in which a thermal mass (with a heat capacity not to exceed that of 20 grams of water) is attached to the temperature sensor. These sensors are then located in the freezer compartment in the positions previously occupied by the instrumented frozen food packages. NBS determined that the physical dimensions of the thermal mass can affect the measured freezer compartment temperature. A thermal mass is desirable on temperature sensors in the freezer because of the large cyclic temperature variation and sharp changes which make temperature averaging difficult. Today's final rule requires the use of weighted temperature sensors and specifies the thermal mass dimensionally, in order to reduce differences due to (1) the effects of the thermal mass on the air circulation in the compartment, (2) the locations of the sensors, and (3) the variation of measured temperatures. The metallic material used and its thermal mass are not critical since neither actually affect the average temperature measured. Therefore, a broad dimensional tolerance is permitted and any metal material is allowed.

5. Non-time Initiated (Demand) Defrost. Many commenters objected to the inclusion in the July 14, 1980, proposed rule of a procedure for

measuring the energy consumption of refrigeration products with non-time initiated (demand) defrost. They stated that this type of system, although technologically feasible, is not currently marketed in the United States. After publication of the July 14, 1980, proposed rule, the "Provisions for the Waiver of Consumer Product Test Procedures," which allow the Assistant Secretary for Conservation and Renewable Energy temporarily to waive test procedures for a particular covered product, became effective. (45 FR 64108, September 28, 1980). Consequently, DOE has concluded that test procedures for non-time initiated defrost products are not currently needed. If such products are produced in the future and the then existing test procedures do not accurately measure the true energy consumption of these products, the manufacturer may petition for a waiver from the test procedures. (10 CFR 430.27). Accordingly, today's rule does not include test procedures for non-time initiated defrost products.

6. Long-time Automatic Defrost. One commenter, when reviewing the July 14, 1980, proposed non-time initiated defrost procedures, noted that these procedures could be adapted very easily for testing newly-designed automatic defrost products which operate for unusually long time periods, i.e., greater than 24 hours, between defrost periods. NBS investigated this recommendation and found that such a procedure could greatly reduce test time for such product designs, since a test point that may currently require four days of testing might be obtained in less than 24 hours of testing with almost no loss of accuracy. Consequently, an optional procedure for testing long-time automatic defrost products, patterned after the non-time initiated defrost test procedure proposed on July 14, 1980, was incorporated into the October 14, 1981, proposed rule. As proposed, this optional test method would only apply for testing automatic defrost refrigerator-freezers and freezers designed such that defrost cycles are separated by 14 hours or more of compressor-operating time. Using this compressor-operating time criteria, the total test time required to arrive at a test data point should be less than 24 hours in most cases. In no case will the total test time exceed 28 hours. A longer test period could be burdensome and would not result in significantly increased accuracy since units which operate for more than 14 hours of compressor-operating time between defrost cycles use only about 1.5 percent of their

electrical energy consumption to perform the defrost function.

Today's final rule incorporates this optional procedure for testing automatic defrost refrigerator-freezers and freezers designed such that defrost cycles are separated by 14 hours or more of compressor-operating time. DOE has made changes, however, to the definition found at section 1.9 of Appendix A1 and section 1.8 of Appendix B1. As proposed, the definition read, "Long-time Defrost" means an automatic defrost system where the timed interval between defrosts is always greater than 14 hours. This definition did not clearly stipulate that the 14 hour time period criteria applied to compressor-operating hours and not simply elapsed time. However, in the discussion of the long-time defrost optional test procedure found in the preamble to the October 14, 1981, proposed rule, DOE's intent was made clear in the statement, "Today's proposal incorporates an alternate procedure for testing of automatic defrost refrigerator-freezers and freezers which require more than 14 hours of compressor-operating time between defrost periods." Since no comments were received regarding this proposed optional test procedure, DOE assumes that its intent was clearly understood. In order to avoid possible confusion over its intent in the future, however, the definition found at section 1.9 of Appendix A1 and section 1.8 of Appendix B1 of today's final rule reads, "Long-time Automatic Defrost" means an automatic defrost system where successive defrost cycles are separated by 14 hours or more of compressor-operating time."

7. Definition of "Steady State"

Conditions. The July 14, 1980, proposal required that a test period could not start until the unit being tested reached steady state temperature conditions. However, a precise definition of steady state conditions was not included. Commenters requested that DOE incorporate the definition used in AHAM Standard HRF-1-1979. NBS and DOE evaluated this suggestion but found that the AHAM definition would not completely specify steady state conditions for all products under all circumstances. Therefore, in the October 14, 1981, proposal, DOE included its own specification for steady state conditions. This specification was modeled after AHAM Standard HRF-1-1979.

A number of comments were received regarding the proposed specification for steady state conditions. Commenters requested a change in the proposed temperature rate-of-change specification

at or below which a unit could be considered to be operating at steady state conditions. The commenters requested that the proposed specification of 0.1°F (0.056°C) per hour in section 2.5 of Appendix A1 and section 2.5 of Appendix B1 be changed to 1.0°F (0.56°C) per 24 hours.

The 0.1°F (0.056°C) per hour specification was proposed by DOE as an acceptable balance between the 0.1°F (0.56°C) in two hours specification for refrigerator fresh food compartments and the 1.0°F (0.56°C) in 24 hours specification for freezer compartments found in the existing test procedures for refrigerators and refrigerator-freezers, and freezers. The commenters, however, want to assure test unit stabilization prior to testing even though it would increase the time necessary to assure that the 1.0°F (0.56°C) per 24 hour temperature rate-of-change specification had been attained. DOE has adopted this recommendation. Consequently, today's final rule contains a 0.042°F (0.023°C) per hour temperature rate-of-change specification in section 2.5 of Appendix A1 and section 2.3 of Appendix B1. This is equivalent to a 1.0°F (0.56°C) per 24 hour temperature rate-of-change specification.

Commenters also requested that section 2.5A. of Appendix A1 be changed to specify that test unit stabilization be determined as satisfying the rate-of-change temperature requirement by comparing the averages of the temperature measurements taken during each complete compressor motor cycle of the test unit over a period of not less than two hours. DOE has not adopted this recommendation because it conflicts with the to be enacted steady state temperature rate-of-change specification. A two hour period is an insufficient time interval over which to evaluate a 0.042°F (0.023°C) per hour temperature rate-of-change with the $\pm 0.5^\circ\text{F}$ (0.28°C) instrumentation accuracy required by the test procedures. DOE is amending section 2.5A. in response to this comment, however. Section 2.5A. of Appendix A1 of today's final rule requires that there be two temperature averaging periods of two or more hours duration each with a three hour interval between them. This change provides a sufficient time period to determine if the temperature rate-of-change specification has been satisfied using temperature measurement instrumentation of the minimum required accuracy. Section 2.3A. of Appendix B1 has been changed to read the same as section 2.5A. of Appendix A1 for this same reason.

Commenters suggested that a separate condition be applied to determine

steady state conditions for refrigerator and refrigerator-freezer products requiring a packaged food load in the freezer compartment. This condition would be the same as section 2.5A. of Appendix A1 as proposed except that the temperature measurement period would be no less than eight hours. Since DOE has already made changes to this section which require less than eight hours of testing and since this time period is sufficient to detect the temperature rate-of-change specification of 0.042°F (0.023°C) per hour, this additional condition is not necessary and has not been adopted. Similarly, the AHAM recommendation that section 2.3A. of Appendix B1 be changed to specify that the temperature measurement period to determine stabilization for freezers be not less than eight hours has not been adopted.

Commenters recommended that section 2.3B. of Appendix B1 be the only applicable criteria to determine stabilization of automatic defrost freezers and that 2.3A. of Appendix B1 be designated to apply to all types of freezers except automatic defrost units. DOE has not adopted this recommendation for the reason that unnecessarily long test periods to determine stabilization for automatic defrost freezers with long defrost-to-defrost times can occur. As a result of the changes made to section 2.3A. of Appendix B1 that have already been discussed, i.e. the requirement for a three hour period between the two 2-hour temperature measurement periods and the more stringent temperature rate-of-change specification of 0.042°F (0.023°C) per hour, any type of freezer unit which meets the conditions specified in section 2.3A. will be in a steady state condition.

Commenters provided identical recommended wording to sections 2.5B. of Appendix A1 and section 2.3B. of Appendix B1 to clarify the requirements of these sections without altering their intent. DOE has evaluated the recommended wording and has no objections to the revised wording. DOE has adopted the recommended wording for section 2.5B. of Appendix A1 and section 2.3B. of Appendix B1 with slight editorial change that the recommended measurement period duration of "two hours or more" for non-cycling units has been changed to "two hours."

8. Test Chamber Ambient Temperature Gradient. Commenters noted that the July 14, 1980, proposal did not contain a requirement that the test chamber vertical ambient air temperature gradient be maintained

when tests are in progress. DOE and NBS agree this requirement is advisable.

The vertical ambient air temperature conditions during the testing process can affect the measured energy use during the test. The existing DOE test procedure requires that the operational conditions of the AHAM standard apply. This standard in turn refers to ANSI B38.1-1970 which, in section 6.2.1, specifies the maximum allowed vertical ambient temperature gradient to be 0.5°F per foot (0.9°C per meter). The standard does not specifically state that this limit prevails during the test. The commenters pointed this out and requested that this be stated in the final rule. Thus, in today's rule a requirement that the vertical gradient be maintained during the test is included and the temperature measurement sensor locations are explicitly defined.

9. Freezer Two-point Test. One commenter contended that the two-point freezer test procedure proposed on July 14, 1980, would cause a decrease in intralaboratory repeatability of test results, which due to the statistical sampling plan, would increase the number of tests required to maintain the same statistical confidence level. Data from a single test of a single product was provided by the commenter and was reviewed by NBS and DOE. The data was found to be insufficient to support the commenter's contention. For example, the commenter supplied an energy consumption versus freezer compartment temperature graph displaying the test results for the test he conducted but did not identify the temperature control knob settings corresponding to the data points displayed. Also, it appeared that the "cold" test point was made with the temperature control device short-circuited to cause the compressor to run continuously. Testing in such a manner does not conform to the DOE test procedures. Finally, any attempt to draw conclusions from a single test of a single product is unwise since no statistical confidence can be assigned to the test results. Thus, no change was made to the DOE test procedure.

10. Freezer Performance. Storage volume and estimated annual operating cost are the only measures of performance for freezers in the existing test procedures. One manufacturer requested that DOE include another measure of performance in the freezer test procedure. That measure would be the rate of freezing. It would quantify the time it takes a freezer to lower the temperature of a load. The commenter noted that the proposed test procedure tends to direct manufacturers towards

smaller, lower cost refrigeration compressors to achieve favorable test results (high efficiency ratings and low estimated annual operating cost figures). Such units would be characterized by low freezing rates. The commenter was concerned that such units would not perform satisfactorily and may pose a health hazard since a large room temperature load placed in the unit might result in the thawing of the existing frozen load during the extended time period that a freezer with a low freezing rate would take to stabilize the entire load at a subfreezing temperature. By including a measure of freezing rate performance in the test procedure, the commenter hopes to discourage manufacturers from pursuing such a design option. DOE acknowledges that such freezer designs are technically possible but has no knowledge that such freezer designs currently exist. Therefore, DOE has not opted to include a measure of freezing performance in the freezer test procedure prescribed today.

11. Accuracy of Test Measurements. While analyzing public comments to the July 14, 1980, proposal, NBS discovered that the new AHAM standard (AHAM-HRF-1-1979) referenced did not clearly define the required accuracy of temperature measurements. Section 7.3.1 of this standard states, "Temperature readings are to be accurate within 1°F (0.5°C)." It is unclear whether this requirement means that the accuracy of temperature measurements should be $\pm 0.5^\circ\text{F}$ (0.28°C) or $\pm 1.0^\circ\text{F}$ (0.5°C). Consequently, for the October 14, 1981, proposed rule, DOE added a temperature measurement accuracy requirement (sections 5.1, Appendices A1 and B1) to specify the same accuracy as that specified in the existing test procedure, i.e., $\pm 0.5^\circ\text{F}$ (0.28°C).

In response to this proposed rule, one commenter requested that this accuracy specification be changed to $\pm 1.0^\circ\text{F}$ (0.5°C). The commenter interpreted the temperature accuracy requirement of AHAM-HRF-1-1979 to be $\pm 1.0^\circ\text{F}$ (0.5°C). He asserted that even "Special Type 'T' thermocouple wire has a limit of error of $\pm 0.75^\circ\text{F}$ (0.42°C) and that recorders with a scale range of 150°F (83°C) have a limit of error of $\pm 0.375^\circ\text{F}$ (0.21°C). It was claimed that these factors combine to limit the accuracy of temperature measurement to $\pm 1.13^\circ\text{F}$ (0.63°C) which makes the proposed accuracy requirement of $\pm 0.5^\circ\text{F}$ (0.28°C) unduly burdensome. It is true that the conditions stated will not provide the accuracy specified by the proposed test procedure. However, there are steps which can be taken to overcome this

problem. The first step is to qualify, i.e. to determine the limit of error associated with, the thermocouple wire used for the test. This can be done to greater accuracy than a thermocouple wire manufacturer can guarantee for large quantities of thermocouple wire. The next step is to use recorders with scale ranges of less than 150°F (83°C). The limit of error associated with recorders with scale ranges less than 150°F (83°F) is less than for those with scale ranges of 150°F (83°C) or more. Following these two steps, DOE and NBS find that temperature measurements can be made with an accuracy of $\pm 0.5^\circ\text{F}$ (0.28°C).

12. Three-Year Period. The July 14, 1980, proposal would have eliminated the existing test procedures for refrigerators and refrigerator-freezers, and freezers. Since the proposed and existing test procedures give almost identical results, several commenters requested that a three-year period be allowed during which the use of either test procedure would be allowed. The commenters stated that manufacturers should have the option to test their products under either test procedure during this three-year period so they will not have to retest immediately all models which are currently labeled. Since there will be little difference in test results between the two test procedures, DOE has provided for the use of either procedure during a three-year period in today's final rule. After the three-year period, only the alternative uniform test methods for measuring the energy consumption of refrigerators and refrigerator-freezers, and freezers (Appendices A1 and B1) may be used.

13. Miscellaneous. After careful consideration of all comments and further consultation with NBS, DOE has incorporated into the final rule some editorial and minor technical changes that were not discussed above. For example, section 6.1.3 of Appendix A1 as proposed is the method for calculating the adjusted total volume of an all-refrigerator. However, an all-refrigerator is a special case of a refrigerator and the methods for determining the adjusted total volumes of these products differ only by the adjustment factors used in the calculations. Therefore, section 6.1.3 has been deleted and section 6.1.1, the method for calculating the adjusted total volume of a refrigerator has been modified to include the adjustment factor for an all-refrigerator and to specify that this particular adjustment factor be used when calculating the adjusted total volume of a refrigerator

which is also an all-refrigerator. Another example is the change made to section 5.1 of Appendix B1 which, as proposed, read, "Temperature measurements shall be made in accordance with HFR-1-1979 section 7.4.3.3 and shall be accurate within $\pm 0.5^\circ\text{F}$ (0.3°C) of true value." In today's final rule this section has been clarified to read, "Temperature measurements shall be made at the locations prescribed in Figure 7-2 of HFR-1-1979 and shall be accurate to within $\pm 0.5^\circ\text{F}$ (0.3°C) of true value."

C. Environmental, Regulatory Impact, and Small Entity Impact Reviews

1. *Environmental Review.* The Department has reviewed today's final rule in accordance with the National Environmental Policy of 1969 (NEPA) (42 U.S.C. 4321 *et seq.*), the Council on Environmental Quality Regulations implementing the procedural provisions of NEPA (40 CFR Part 1500 *et seq.*), and the Department's own NEPA guidelines (45 FR 20694, March 28, 1980, as amended by 47 FR 7976, Feb. 23, 1982) to determine if an environmental impact statement (EIS) or an environmental assessment (EA) is required.

Today's final rule serves only to standardize the measurement of energy usage for refrigerators and refrigerator-freezers, and freezers. The action of prescribing these revised test procedures will not result in any environmental impacts. Because it is clear that today's final rule is not a major Federal action significantly affecting the quality of the human environment within the meaning of NEPA, DOE has determined that neither an EA nor an EIS is required.

2. *Regulatory Impact Review.* The final rule has been reviewed in accordance with Executive Order 12291 which directs that all regulations achieve their intended goals without imposing unnecessary burdens on the economy, on individuals, on public or private organizations, or on State and local governments. The Executive Order also requires that regulatory impact analyses be prepared for "major rules". The Executive Order defines a major rule as any regulation that is likely to result in: (1) An annual effect on the economy of \$100 million or more; (2) A major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions; or (3) Significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

This final rule would only make minor changes in the test procedures for refrigerators and refrigerator-freezers, and freezers to lessen the test burdens associated therewith. Therefore, DOE has determined that this final rule does not come within the definition of a major rule.

In accordance with section 3(c)(3) of the Executive Order, which applies to rules other than major rules, the final rule was submitted to OMB for review without a regulatory impact analysis. OMB has concluded its review in accordance with section 3(e)(2)(C) of the Executive Order.

3. *Small Entity Review.* The Regulatory Flexibility Act (Pub. L. 96-354) requires that an agency prepare a final regulatory analysis to be available at the time the final rule is published. This requirement does not apply if the agency "certifies that the rule will not * * * have a significant economic impact on a substantial number of small entities."

This rule only affects manufacturers of refrigerators and refrigerator-freezers, and freezers. There are not a substantial number of small entities that manufacture refrigerators and refrigerator-freezers, and freezers. Moreover, the changes made would not have significant economic impacts, but rather would reduce the testing burdens on all entities.

Therefore, pursuant to Section 605(b), DOE certifies that this final rule would not have a "significant economic impact on a substantial number of small entities."

List of Subjects in 10 CFR Part 430

Administrative practice and procedure, Energy conservation, Household appliances.

In consideration of the foregoing, Part 430 of Chapter II of Title 10, Code of Federal Regulations, is amended as set forth below, effective September 9, 1982.

Issued in Washington, D.C., July 19, 1982.

Joseph J. Tribble,

Assistant Secretary, Conservation and Renewable Energy.

PART 430—ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS

Provisions of 10 CFR Part 430, Subparts A and B are amended and Appendices A1 and B1 are added to read as follows:

Subpart A—General Provisions

1. The authority citation for Part 430 reads as follows:

Authority: Sec. 323, Pub. L. 94-163, 89 Stat. 917, as amended by Pub. L. 95-619, 92 Stat. 3266 (42 U.S.C. 6293).

2. Section 430.2 definitions of "electric refrigerator," "electric refrigerator-freezer," "freezer," "refrigerator," and "refrigerator-freezer" are revised to read as follows:

§ 430.2 [Amended]

"Electric refrigerator" means a cabinet designed for the refrigerated storage of food at temperatures above 32°F , and having a source of refrigeration requiring single phase, alternating current electric energy input only. An electric refrigerator may include a compartment for the freezing and storage of food at temperatures below 32°F , but does not provide a separate low temperature compartment designed for the freezing and storage of food at temperatures below 8°F .

"Electric refrigerator-freezer" means a cabinet which consists of two or more compartments with at least one of the compartments designed for the refrigerated storage of food at temperatures above 32°F , and with at least one of the compartments designed for the freezing and storage of food at temperatures below 8°F , which may be adjusted by the user to a temperature of 0°F or below. The source of refrigeration requires single phase, alternating current electric energy input only.

"Freezer" means a cabinet designed as a unit for the freezing and storage of food at temperatures of 0°F or below, and having a source of refrigeration requiring single phase, alternating current electric energy input only.

"Refrigerator" means an electric refrigerator.

"Refrigerator-freezer" means an electric refrigerator-freezer.

Subpart B—Test Procedures

3. Section 430.22 paragraphs (a) and (b) are revised and (a)(6) and (b)(6) are added to read as follows:

§ 430.22 Test procedures for measures of energy consumption.

(a) *Refrigerators and refrigerator-freezers.* (1) The estimated annual operating cost for electric refrigerators and electric refrigerator-freezers without an anti-sweat heater switch shall be the product of the following three factors: (i) The representative average-use cycle of

365 cycles per year, (ii) the average per-cycle energy consumption for the standard cycle in kilowatt-hours per cycle, determined according to 4.1 of Appendix A or 6.2 of Appendix A1 of this subpart, and (iii) the representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary, the resulting product then being rounded off to the nearest dollar per year.

(2) The estimated annual operating cost for electric refrigerators and electric refrigerator-freezers with an anti-sweat heater switch shall be the product of the following three factors: (i) The representative average-use cycle of 365 cycles per year, (ii) half the sum of the average per-cycle energy consumption for the standard cycle and the average per-cycle energy consumption for a test cycle type with the anti-sweat heater switch in the position set at the factory just prior to shipping, each in kilowatt-hours per cycle, determined according to 4.1 of Appendix A or 6.2 of Appendix A1 of this subpart, and (iii) the representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary, the resulting product then being rounded off to the nearest dollar per year.

(3) The estimated annual operating cost for any other specified cycle type for electric refrigerators and electric refrigerator-freezers shall be the product of the following three factors: (i) The representative average-use cycle of 365 cycles per year, (ii) the average per-cycle energy consumption for the specified cycle type, determined according to 4.1 of Appendix A or 6.2 of Appendix A1 of this subpart, and (iii) the representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary, the resulting product then being rounded off to the nearest dollar per year.

(4) The energy factor for electric refrigerators and electric refrigerator-freezers, expressed in cubic feet per kilowatt-hour per cycle, shall be—

(i) For electric refrigerators and electric refrigerator-freezers not having an anti-sweat heater switch, the quotient of (A) the adjusted total volume in cubic feet, determined according to 4.2 of Appendix A or 6.1 of Appendix A1 of this subpart, divided by (B) the average per-cycle energy consumption for the standard cycle in kilowatt-hours per cycle, determined according to 4.1 of Appendix A or 6.2 of Appendix A1 of this subpart, the resulting quotient then being rounded off to the second decimal place, and

(ii) For electric refrigerators and electric refrigerator-freezers having an anti-sweat heater switch, the quotient of

(A) the adjusted total volume in cubic feet, determined according to 4.2 of Appendix A or 6.1 of Appendix A1 of this subpart, divided by (B) half the sum of the average per-cycle energy consumption for the standard cycle and the average per-cycle energy consumption for a test cycle type with the anti-sweat heater switch in the position set at the factory just prior to shipping, each in kilowatt-hours per cycle, determined according to 4.1 of Appendix A or 6.2 of Appendix A1 of this subpart, the resulting quotient then being rounded off to the second decimal place.

(5) Other useful measures of energy consumption for electric refrigerators and electric refrigerator-freezers shall be those measures of energy consumption for electric refrigerators and electric refrigerator-freezers which the Secretary determines are likely to assist consumers in making purchasing decisions and which are derived from the application of Appendix A or Appendix A1 of this subpart.

(6) The alternative uniform test method for measuring the energy consumption of electric refrigerators and electric refrigerator-freezers set forth in Appendix A1 of this subpart may be used instead of the procedure set forth in Appendix A of this subpart until 36 months from the effective date of this amendment. After that date, Appendix A of this subpart may not be used and only Appendix A1 (alternative uniform test method) may be used.

(b) *Freezers.* (1) The estimated annual operating cost for freezers without an anti-sweat heater switch shall be the product of the following three factors: (i) The representative average-use cycle of 365 cycles per year, (ii) the average per-cycle energy consumption for the standard cycle in kilowatt-hours per cycle, determined according to 4.1 of Appendix B or 6.2 of Appendix B1 of this subpart, and (iii) the representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary, the resulting product then being rounded off to the nearest dollar per year.

(2) The estimated annual operating cost for freezers with an anti-sweat heater switch shall be the product of the following three factors: (i) The representative average-use cycle of 365 cycles per year, (ii) half the sum of the average per-cycle energy consumption for the standard cycle and the average per-cycle energy consumption for a test cycle type with the anti-sweat heater switch in the position set at the factory just prior to shipping, each in kilowatt-hours per cycle, determined according to 4.1 of Appendix B or 6.2 of Appendix B1

of this subpart, and (iii) the representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary, the resulting product then being rounded off to the nearest dollar per year.

(3) The estimated annual operating cost for an other specified cycle type for freezers shall be the product of the following three factors: (i) The representative average-use cycle of 365 cycles per year, (ii) the average per-cycle energy consumption for the specified cycle type, determined according to 4.1 of Appendix B or 6.2 of Appendix B1 of this subpart and (iii) the representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary, the resulting product then being rounded off to the nearest dollar per year.

(4) The energy factor for freezers, expressed in cubic feet per kilowatt-hour per cycle, shall be—

(i) For freezers not having an anti-sweat heater switch, the quotient of (A) the adjusted net refrigerated volume in cubic feet, determined according to 4.2 of Appendix B or 6.1 of Appendix B1 of this subpart, divided by (B) the average per-cycle energy consumption for the standard cycle in kilowatt-hours per cycle, determined according to 4.1 of Appendix B or 6.2 of Appendix B1 of this subpart, the resulting quotient then being rounded off to the second decimal place, and

(ii) For freezers having an anti-sweat heater switch, the quotient of (A) the adjusted net refrigerated volume in cubic feet, determined according to 4.2 of Appendix B or 6.1 of Appendix B1 of this subpart, divided by (B) half the sum of the average per-cycle energy consumption for the standard cycle and the average per-cycle energy consumption for a test cycle type with the anti-sweat switch in the position set at the factory just prior to shipping, each in kilowatt-hours per cycle, determined according to 4.1 of Appendix B or 6.2 of Appendix B1 of this subpart, the resulting quotient then being rounded off to the second decimal place.

(5) Other useful measures of energy consumption for freezers shall be those measures of energy consumption for freezers which the Secretary determines are likely to assist consumers in making purchasing decisions and which are derived from the application of Appendix B or Appendix B1 of this subpart.

(6) The alternative uniform test method for measuring the energy consumption for freezers set forth in Appendix B1 of this subpart may be used instead of the procedure set forth

in Appendix B of this subpart until 36 months from the effective date of this amendment. After that date, Appendix B of this subpart may not be used and only Appendix B1 (alternative uniform test method) may be used.

4. Subpart B of Part 430 is amended by adding after Appendix A, Appendix A1, as follows:

Appendix A1 (Alternative) To Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of Electric Refrigerators and Electric Refrigerator-Freezers

1. Definitions

1.1 "HRF-1-1979" means the Association of Home Appliance Manufacturers standard for household refrigerators, combination refrigerator-freezers, and household freezers, also approved as an American National Standard as a revision of ANSI B 38.1-1970.

1.2 "Adjusted total volume" means the sum of (i) the fresh food compartment volume as defined in HRF-1-1979 in cubic feet, and (ii) the product of an adjustment factor and the net freezer compartment volume as defined in HRF-1-1979, in cubic feet.

1.3 "Anti-sweat heater" means a device incorporated into the design of a refrigerator or refrigerator-freezer to prevent the accumulation of moisture on exterior surfaces of the cabinet under conditions of high ambient humidity.

1.4 "all-refrigerator" means an electric refrigerator which does not include a compartment for the freezing and long time storage of food at temperatures below 32°F (0.0°C). It may include a compartment of 0.50 cubic feet capacity (14.2 liters) or less for the freezing and storage of ice.

1.5 "Cycle" means the period of 24 hours for which the energy use of an electric refrigerator or electric refrigerator-freezer is calculated as though the consumer activated compartment temperature controls were set so that the desired compartment temperatures were maintained.

1.6 "Cycle type" means the set of test conditions having the calculated effect of operating an electric refrigerator or electric refrigerator-freezer for a period of 24 hours, with the consumer activated controls other than those that control compartment temperatures set to establish various operating characteristics.

1.7 "Standard cycle" means the cycle type in which the anti-sweat heater control, when provided, is set in the highest energy consuming position.

1.8 "Automatic defrost" means a system in which the defrost cycle is automatically initiated and terminated, with resumption of normal refrigeration at the conclusion of the defrost operation. The system automatically prevents the permanent formation of frost on all refrigerated surfaces. Nominal refrigerated food temperatures are maintained during the operation of the automatic defrost system.

1.9 "Long-time Automatic Defrost" means an automatic defrost system where successive defrost cycles are separated by 14 hours or more of compressor-operating time.

1.10 "Stabilization Period" means the total period of time during which steady-state conditions are being attained or evaluated.

2. Test Conditions

2.1 Ambient temperature. The ambient temperature shall be $90.0 \pm 1^\circ\text{F}$ ($32.3 \pm 0.6^\circ\text{C}$) during the stabilization period and during the test period.

2.2 Operational conditions. The electric refrigerator or electric refrigerator-freezer shall be installed and its operating conditions maintained in accordance with HRF-1-1979, section 7.2 through section 7.4.3.3, except that the vertical ambient temperature gradient at locations 10 inches (25.4 cm) out from the centers of the two sides of the unit being tested is to be maintained during the test. Unless the area is obstructed by shields or baffles, the gradient is to be maintained from 2 inches (5.1 cm) above the floor or supporting platform to a height one foot (30.5 cm) above the unit under test. Defrost controls are to be operative and the anti-sweat heater switch is to be "on" during one test and "off" during a second test. Other exceptions are noted in 2.3, 2.4, and 5.1 below.

2.3 Conditions for automatic defrost refrigerator-freezers. For automatic defrost refrigerator-freezers, the freezer compartments shall not be loaded with any frozen food packages. Cylindrical metallic masses of dimensions 1.12 ± 0.25 inches (2.9 ± 0.6 cm) in diameter and height shall be attached in good thermal contact with each temperature sensor within the refrigerated compartments. All temperature measuring sensor masses shall be supported by nonthermally conductive supports in such a manner that there will be at least one inch (2.5 cm) of air space separating the thermal mass from contact with any surface. In case of interference with hardware at the sensor locations specified in section 5.1, the sensors shall be placed at the nearest adjacent location such that there will be a one inch air space separating the sensor mass from the hardware.

2.4 Conditions for all-refrigerators. There shall be no load in the freezer compartment during the test.

2.5 Steady State Condition. Steady state conditions exist if the temperature measurements in all measured compartments taken at four minute intervals or less during a stabilization period are not changing at a rate greater than 0.042°F (0.023°C) per hour as determined by the applicable condition of A or B.

A. The average of the measurements during a two hour period if no cycling occurs or during a number of complete repetitive compressor cycles through a period of no less than two hours is compared to the average over an equivalent time period with three hours elapsed between the two measurement periods.

B. If A above cannot be used, the average of the measurements during a number of complete repetitive compressor cycles through a period of no less than two hours and including the last complete cycle prior to a defrost period, or if no cycling occurs, the average of the measurements during the last two hours prior to a defrost period; are

compared to the same averaging period prior to the following defrost period.

3. Test Control Settings

3.1 Model with no user operable temperature control. A test shall be performed during which the compartment temperatures and energy use shall be measured. A second test shall be performed with the temperature control electrically short circuited to cause the compressor to run continuously.

3.2 Model with user operable temperature control. Testing shall be performed in accordance with one of the following sections using the standardized temperatures of:

All-refrigerator: 38°F (3.3°C) fresh food compartment temperature
Refrigerator: 15°F (-9.4°C) freezer compartment temperature
Refrigerator-freezer: 5°F (-15°C) freezer compartment temperature

3.2.1 A first test shall be performed with all compartment temperature controls set at their median position midway between their warmest and coldest settings. Knob detents shall be mechanically defeated if necessary to attain a median setting. A second test shall be performed with all controls set at either their warmest or their coldest setting (not electrically or mechanically bypassed), whichever is appropriate, to attempt to achieve compartment temperatures measured during the two tests which bound (i.e., one is above and one is below) the standardized temperature for the type of product being tested. If the compartment temperatures measured during these two tests bound the appropriate standardized temperature, then these test results shall be used to determine energy consumption. If the compartment temperature measured with all controls set at their coldest setting is above the standardized temperature, a third test shall be performed with all controls set at their warmest setting and the result of this test shall be used with the result of the test performed with all controls set at their coldest setting to determine energy consumption. If the compartment temperature measured with all controls set at their warmest setting is below the standardized temperature; and the fresh food compartment temperature is below 45°F (7.22°C) in the case of a refrigerator or a refrigerator-freezer, excluding an all-refrigerator, then the result of this test alone will be used to determine energy consumption.

3.2.2 Alternatively, a first test may be performed with all temperature controls set at their warmest setting. If the compartment temperature is below the appropriate standardized temperature, and the fresh food compartment temperature is below 45°F (7.22°C) in the case of a refrigerator or a refrigerator-freezer, excluding an all-refrigerator, then the result of this test alone will be used to determine energy consumption. If the above conditions are not met, then the unit shall be tested in accordance with 3.2.1 above.

3.2.3 Alternatively, a first test may be performed with all temperature controls set at their coldest setting. If the compartment temperature is above the appropriate

standardized temperature, a second test shall be performed with all controls set at their warmest control setting and the results of these two tests shall be used to determine energy consumption. If the above condition is not met, then the unit shall be tested in accordance with 3.2.1 above.

4. Test Period

4.1 Test Period. Tests shall be performed by establishing the conditions set forth in Section 2, and using control settings as set forth in Section 3, above.

4.1.1 Nonautomatic Defrost. If the model being tested has no automatic defrost system, the test time period shall start after steady state conditions have been achieved and be of not less than three hours in duration. During the test period, the compressor motor shall complete two or more whole compressor cycles (a compressor cycle is a complete "on" and a complete "off" period of the motor). If no "off" cycling will occur, as determined during the stabilization period, the test period shall be three hours. If incomplete cycling (less than two compressor cycles) occurs during a 24 hour period, the results of the 24 hour period shall be used.

4.1.2 Automatic Defrost. If the model being tested has an automatic defrost system, the test time period shall start after steady state conditions have been achieved and be from one point during a defrost period to the same point during the next defrost period. If the model being tested has a long-time automatic defrost system, the alternative provisions of 4.1.2.1 may be used.

4.1.2.1 Long-time Automatic Defrost. If the model being tested has a long-time automatic defrost system, the test time period may consist of two parts. A first part would be the same as the test for a unit having no defrost provisions (section 4.1.1). The second part would start when a defrost period is manually initiated during a compressor "on" cycle and terminate at the second turn "on" of the compressor motor or after four hours, whichever comes first.

5. Test Measurements

5.1 Temperature Measurements. Temperature measurements shall be made at the locations prescribed in Figures 7.1 and 7.2 of HRF-1-1979 and shall be accurate to within $\pm 0.5^\circ\text{F}$ (0.3°C) of true value. No freezer temperature measurements need be taken in an all-refrigerator model.

If the interior arrangements of the cabinet do not conform with those shown in Figure 7.1 and 7.2 of HRF-1-1979, measurements shall be taken at selected locations chosen to represent approximately the entire refrigerated compartment. The locations selected shall be a matter of record.

5.1.1 Measured Temperature. The measured temperature of a compartment is to be the average of all sensor temperature readings taken in that compartment at a particular time. Measurements shall be taken at regular intervals not to exceed four minutes.

5.1.2 Compartment Temperature. The compartment temperature for each test period shall be an average of the measured temperatures taken in a compartment during a complete cycle or several complete cycles

of the compressor motor (one compressor cycle is one complete motor "on" and one complete motor "off" period). For long-time automatic defrost models, compartment temperatures shall be those measured in the first part of the test period specified in 4.1.3.

5.1.2.1 The number of complete compressor motor cycles over which the measured temperatures in a compartment are to be averaged to determine compartment temperature shall be equal to the number of minutes between measured temperature readings, rounded up to the next whole minute or a number of complete cycles over a time period exceeding one hour. One of the cycles shall be the last complete compressor motor cycle during the test period.

5.1.2.2 If no compressor motor cycling occurs, the compartment temperature shall be the average of the measured temperatures taken during the last thirty-two minutes of the test period.

5.1.2.3 If incomplete cycling occurs, the compartment temperatures shall be the average of the measured temperatures taken during the last three hours of the last complete "on" period.

5.2 Energy Measurements

5.2.1 Per-day Energy Consumption. The energy consumption in kilowatt-hours per day for each test period shall be the energy expended during the test period as specified in section 4.1 adjusted to a 24 hour period. The adjustment shall be determined as follows:

5.2.1.1 Nonautomatic and automatic defrost models. The energy consumption in kilowatt-hours per day shall be calculated equivalent to:

$$ET = EP \times 1440 / T$$

where

ET = test cycle energy expended in kilowatt-hours per day,

EP = energy expended in kilowatt-hours during the test period,

T = length of time of the test period in minutes, and

1440 = conversion factor to adjust to a 24 hour period in minutes per day.

5.2.1.2 Long-time Automatic Defrost. If the two part test method is used, the energy consumption in kilowatt-hours per day shall be calculated equivalent to:

$$ET = (1440 \times EP1 / T1) + [(EP2 - (EP1 \times T2 / T1)) \times 12 / CT]$$

where

ET and 1440 are defined in 5.2.1.1,

EP1 = energy expended in kilowatt-hours during the first part of the test,

EP2 = energy expended in kilowatt-hours during the second part of the test,

T1 and T2 = length of time in minutes of the first and second test parts respectively,

CT = Defrost timer run time in hours required to cause it to go through a complete cycle, to the nearest tenth hour per cycle, and

12 = factor to adjust for a 50% run time of the compressor in hours per day.

5.3 Volume measurements. The electric refrigerator or electric refrigerator-freezer total refrigerated volume, VT, shall be measured in accordance with HRF-1-1979, section 3.20 and sections 4.2 through 4.3 and be calculated equivalent to:

$$VT = VF + VFF$$

where

VT = total refrigerated volume in cubic feet,

VF = freezer compartment volume in cubic feet, and

VFF = fresh food compartment volume in cubic feet.

6. Calculation of Derived Results from Test Measurements

6.1 Adjusted Total Volume.

6.1.1 Electric refrigerators. The adjusted total volume, VA, for electric refrigerators under test shall be defined as:

$$VA = (VF \times CR) + VFF$$

where

VA = adjusted total volume in cubic feet,

VF and VFF are defined in 5.3, and

CR = adjustment factor of 1.44 for refrigerators other than all-refrigerators, or 1.0 for all-refrigerators, dimensionless,

6.1.2 Electric refrigerator-freezers. The adjusted total volume, VA, for electric refrigerator-freezers under test shall be calculated as follows:

$$VA = (VF \times CRF) + VFF$$

where

VF and VFF are defined in 5.3 and VA is defined in 6.1.1,

CRF = adjustment factor of 1.63, dimensionless,

6.2 Average Per-Cycle Energy consumption.

6.2.1 All-refrigerator Models. The average per-cycle energy consumption for a cycle type is expressed in kilowatt-hours per cycle to the nearest one hundredth (0.01) kilowatt-hour and shall depend upon the temperature attainable in the fresh food compartment as shown below.

6.2.1.1 If the fresh food compartment temperature is always below 38.0°F (3.3°C), the average per-cycle energy consumption shall be equivalent to:

$$E = ET1$$

where

E = Total per-cycle energy consumption in kilowatt-hours per day,

ET is defined in 5.2.1, and Number 1 indicates the test period during which the highest fresh food compartment temperature is measured.

6.2.1.2 If one of the fresh food compartment temperatures measured for a test period is greater than 38.0°F (3.3°C), the average per-cycle energy consumption shall be equivalent to:

$$E = ET1 + [(ET2 - ET1) \times (38.0 - TR1) / (TR2 - TR1)]$$

where

E is defined in 6.2.1.1,

ET is defined in 5.2.1,

TR = Fresh food compartment temperature determined according to 5.1.2 in degrees F,

Number 1 and 2 indicates measurements taken during the first and second test period as appropriate, and 38.0 = Standardized fresh food compartment temperature in degrees F.

6.2.2 Refrigerators and refrigerator-freezers. The average per-cycle energy consumption for a cycle type is expressed in kilowatt-hours per cycle to the nearest one hundredth (0.01) kilowatt-hour and shall be defined in the applicable following manner.

6.2.2.1 If the fresh food compartment temperature is always at or below 45°F (7.2°C) in both of the tests and the freezer compartment temperature is always at or below 15°F (-9.4°C) in both tests of a refrigerator or at or below 5°F (-15°C) in both tests of a refrigerator-freezer, the per-cycle energy consumption shall be:

$E = ET_1$

where

E is defined in 6.2.1.1,

ET is defined in 5.2.1, and

Number 1 indicates the test period during which the highest freezer compartment temperature was measured.

6.2.2.2 If the conditions of 6.2.2.1 do not exist, the per-cycle energy consumption shall be defined by the higher of the two values calculated by the following two formulas:

$E = ET_1 + ((ET_2 - ET_1) \times (45.0 - TR_1) / (TR_2 - TR_1))$

and

$E = ET_1 + ((ET_2 - ET_1) \times (k - TF_1) / (TF_2 - TF_1))$

where

E is defined in 6.2.1.1,

ET is defined in 5.2.1,

TR and number 1 and 2 are defined in 6.2.1.2,

TF = Freezer compartment temperature determined according to 5.1.2 in degrees F,

45.0 is a specified fresh food compartment temperature in degree F, and

k is a constant 15.0 for refrigerators or 5.0 for refrigerator-freezers each being standardized freezer compartment temperature in degrees F.

5. Subpart B of Part 430 is amended by adding after Appendix B, Appendix B1, as follows,

Appendix B1 (Alternative) to Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of Freezers.

1. Definitions.

1.1 "HRF-1-1979" means the Association of Home Appliance Manufacturers standard for household refrigerators, combination refrigerators-freezers, and household freezers, also approved as an American National Standard as a revision of ANSI B38.1-1970.

1.2 "Anti-sweat heater" means a device incorporated into the design of a freezer to prevent the accumulation of moisture on exterior surfaces of the cabinet under conditions of high ambient humidity.

1.3 "Cycle" means the period of 24 hours for which the energy use of a freezer is calculated as though the consumer-activated compartment temperature controls were preset so that the desired compartment temperatures were maintained.

1.4 "Cycle type" means the set of test conditions having the calculated effect of operating a freezer for a period of 24 hours with the consumer-activated controls other than the compartment temperature control set to establish various operating characteristics.

1.5 "Standard cycle" means the cycle type in which the anti-sweat heater switch, when provided, is set in the highest energy consuming position.

1.6 "Adjusted total volume" means the product of, (1) the freezer volume as defined

in HRF-1-1979 in cubic feet, times (2) an adjustment factor.

1.7 "Automatic Defrost" means a system in which the defrost cycle is automatically initiated and terminated, with resumption of normal refrigeration at the conclusion of defrost operation. The system automatically prevents the permanent formation of frost on all refrigerated surfaces. Nominal refrigerated food temperatures are maintained during the operation of the automatic defrost system.

1.8 "Long-time Automatic Defrost" means an automatic defrost system where successive defrost cycles are separated by 14 hours or more of compressor-operating time.

1.9 "Stabilization Period" means the total period of time during which steady-state conditions are being attained or evaluated.

2. Test Conditions.

2.2 Operational conditions. The freezer shall be installed and its operating conditions maintained in accordance with HRF-1-1979, section 7.2 through section 7.4.3.3, except that the vertical ambient gradient at locations 10 inches (25.4 cm) out from the centers of the two sides of the unit being tested is to be maintained during the test. Unless the area is obstructed by shields or baffles, the gradient is to be maintained from 2 inches (5.1 cm) above the floor or supporting platform to a height one foot (30.5 cm) above the unit under test. Defrost controls are to be operative and the anti-sweat heater switch is to be "on" during one test and "off" during a second test.

2.1 Ambient temperature. The ambient temperature shall be $90.0 \pm 1.0^\circ\text{F}$ ($32.0 \pm 0.6^\circ\text{C}$) during the stabilization period and during the test period.

2.3 Steady State Condition. Steady state conditions exist if the temperature measurements taken at four minute intervals or less during a stabilization period are not changing at a rate greater than 0.042°F (0.023°C) per hour as determined by the applicable condition of A or B.

[Note.—Change format of 2.3A to match format of 2.3B.]

A—The average of the measurements during a two hour period if no cycling occurs or during a number of complete repetitive compressor cycles through a period of no less than two hours is compared to the average an equivalent time period with three hours elapsed between the two measurement periods.

B—If A above cannot be used, the average of the measurements during a number of complete repetitive compressor cycles through a period of no less than two hours and including the last complete cycle prior to a defrost period, or if no cycling occurs, the average of the measurements during the last two hours prior to a defrost period; are compared to the same averaging period prior to the following defrost period.

3. Test Control Settings.

3.1 Model with no user operable temperature control. A test shall be performed during which the compartment temperature and energy use shall be measured. A second test shall be performed with the temperature control electrically

short circuited to cause the compressor to run continuously.

3.2 Model with user operable temperature control. Testing shall be performed in accordance with one of the following sections using the standardized temperature of 0.0°F (-17.8°C).

3.2.1 A first test shall be performed with all temperature controls set at their median position midway between their warmest and coldest settings. Knob detents shall be mechanically defeated if necessary to attain a median setting. A second test shall be performed with all controls set at either their warmest or their coldest setting (not electrically or mechanically bypassed), whichever is appropriate, to attempt to achieve compartment temperatures measured during the two tests which bound (i.e., one is above and one is below) the standardized temperature. If the compartment temperatures measured during these two tests bound the standardized temperature, then these test results shall be used to determine energy consumption. If the compartment temperature measured with all controls set at their coldest setting is above the standardized temperature, a third test shall be performed with all controls set at their warmest setting and the result of this test shall be used with the result of the test performed with all controls set at their coldest setting to determine energy consumption. If the compartment temperature measured with all controls set at their warmest setting is below the standardized temperature; then the result of this test alone will be used to determine energy consumption.

3.2.2 Alternatively, a first test may be performed with all temperature controls set at their warmest setting. If the compartment temperature is below the standardized temperature, then the result of this test alone will be used to determine energy consumption. If the above condition is not met, then the unit shall be tested in accordance with 3.2.1 above.

3.2.3 Alternatively, a first test may be performed with all temperature controls set at their coldest setting. If the compartment temperature is above the standardized temperature, a second test shall be performed with all controls set at their warmest setting and the results of these two tests shall be used to determine energy consumption. If the above condition is not met, then the unit shall be tested in accordance with 3.2.1 above.

4. Test Period.

4.1 Test Period. Tests shall be performed by establishing the conditions set forth in Section 2 and using control settings as set forth in Section 3 above.

4.1.1 Nonautomatic Defrost. If the model being tested has no automatic defrost system, the test time period shall start after steady state conditions have been achieved, and be of not less than three hours' duration. During the test period the compressor motor shall complete two or more whole cycles (a compressor cycle is a complete "on" and a complete "off" period of the motor). If no "off" cycling will occur, as determined during the stabilization period, the test period shall

be three hours. If incomplete cycling (less than two compressor cycles) occurs during a 24 hour period, the results of the 24 hour period shall be used.

4.1.2 Automatic Defrost. If the model being tested has an automatic defrost system, the test time period shall start after steady state conditions have been achieved and be from one point during a defrost period to the same point during the next defrost period. If the model being tested has a long-time automatic defrost system, the alternate provisions of 4.1.2.1 may be used.

4.1.2.1 Long-time Automatic Defrost. If the model being tested has a long-time automatic defrost system, the test time period may consist of two parts. A first part would be the same as the test for a unit having no defrost provisions (section 4.1.1). The second part would start when a defrost period is manually initiated during a compressor "on" cycle and terminate at the second turn "on" of the compressor motor or after four hours, whichever comes first.

5. Test Measurements.

5.1 Temperature Measurements. Temperature measurements shall be made at the locations prescribed in Figure 7-2 of HRF-1-1979 and shall be accurate to within $\pm 0.5^\circ\text{F}$ (0.3°C) of true value.

5.1.1 Measured Temperature. The measured temperature is to be the average of all sensor temperature readings taken at a particular time. Measurements shall be taken at regular intervals not to exceed four minutes.

5.1.2 Compartment Temperature. The compartment temperature for each test period shall be an average of the measured temperatures taken during a complete cycle, or several complete cycles of the compressor motor (one compressor cycle is one complete motor "on" and one complete motor "off" period). For long-time automatic defrost models, compartment temperature shall be that measured in the first part of the test period specified in 4.1.3.

5.1.2.1 The number of complete compressor motor cycles over which the measured temperatures in a compartment are to be averaged to determine compartment temperature shall be equal to the number of minutes between measured temperature readings rounded up to the next whole minute or a number of complete cycles over a time period exceeding one hour. One of the cycles shall be the last complete compressor motor cycles during the test period.

5.1.2.2 If no compressor motor cycling occurs, the compartment temperature shall be the average of the measured temperatures taken during the last thirty-two minutes of the test period.

5.1.2.3 If incomplete cycling occurs (less than one cycle) the compartment temperature shall be the average of all readings taken during the last three hours of the last complete "on" period.

5.2 Energy Measurements:

5.2.1 Per-day Energy Consumption. The energy consumption in kilowatt-hours per day for each test period shall be the energy expended during the test period as specified in section 4.1 adjusted to a 24 hour period.

The adjustment shall be determined as follows:

5.2.1.1 Nonautomatic and automatic defrost models. The energy consumption in kilowatt-hours per day shall be calculated equivalent to:

$$ET = (EP \times 1440 \times K) / T \text{ where}$$

ET = test cycle energy expended in kilowatt-hours per day,

EP = energy expended in kilowatt-hours during the test period,

T = length of time of the test period in minutes,

1440 = conversion factor to adjust to a 24 hour period in minutes per day, and

K = correction factor of 0.7 for chest freezers and 0.85 for upright freezers to adjust for average household usage, dimensionless.

5.2.1.2 Long-time Automatic Defrost. If the two part test method is used, the energy consumption in kilowatt-hours per day shall be calculated equivalent to:

$$ET = (1440 \times EP_1 / T_1) + ((EP_2 - (EP_1 \times T_2 / T_1)) \times K \times 12 / CT)$$

where

ET, 1440, and K are defined in 5.2.1.1

EP₁ = energy expended in kilowatt-hours during the first part of the test,

EP₂ = energy expended in kilowatt-hours during the second part of the test,

CT = Defrost timer run time in hours required to cause it to go through a complete cycle, to the nearest tenth hour per cycle, 12 = conversion factor to adjust for a 50% run time of the compressor in hours per day, and

T₁ and T₂ = length of time in minutes of the first and second test parts respectively.

5.3 Volume measurements. The total refrigerated volume, VT, shall be measured in accordance with HRF-1-1979, section 3.20 and section 5.1 through 5.3.

6. Calculation of Derived Results From Test Measurements.

6.1 Adjusted Total Volume. The adjusted total volume, VA, for freezers under test shall be defined as:

$$VA = VT \times CF$$

where

VA = adjusted total volume in cubic feet,

VT = total refrigerated volume in cubic feet, and

CF = Correction factor of 1.73, dimensionless.

6.2 Average Per Cycle Energy Consumption:

6.2.1 The average per-cycle energy consumption for a cycle type is expressed in kilowatt-hours per cycle to the nearest one hundredth (0.01) kilowatt-hour and shall depend upon the compartment temperature attainable as shown below.

6.2.1.1 If the compartment temperature is always below 0.0°F (-17.8°C), the average per-cycle energy consumption shall be equivalent to:

$$E = ET_1$$

where

E = Total per-cycle energy consumption in kilowatt-hours per day.

ET is defined in 5.2.1, and Number 1 indicates the test period during which the highest compartment temperature is measured.

6.2.1.2 If one of the compartment temperatures measured for a test period is greater than 0.0°F (17.8°C), the average per-cycle energy consumption shall be equivalent to:

$$E = ET_1 + ((ET_2 - ET_1) \times (0.0 - TF_1) / (TF_2 - TF_1))$$

where

E is defined in 6.2.1.1

ET is defined in 5.2.1

TF = compartment temperature determined according to 5.1.2 in degrees F.

Numbers 1 and 2 indicate measurements taken during the first and second test period as appropriate, and

0.0 = Standardized compartment temperature in degrees F.

[FR 82-21600 Filed 8-9-82; 8:45 am]

BILLING CODE 6450-01-M

SMALL BUSINESS ADMINISTRATION

13 CFR Part 108

Loans to State and Local Development Companies; Eligibility Requirements for Certified Development Companies

AGENCY: Small Business Administration.

ACTION: Final rules.

SUMMARY: The Small Business Administration is publishing its final rules for the certification requirements of its Section 503 Certified Development Company program. These rules eliminate the regulation requiring 503 development companies operating on a statewide basis to be authorized by a special act of the state legislature. In addition, the final rules establish a standardized membership requirement for 503 development companies.

EFFECTIVE DATE: August 10, 1982.

FOR FURTHER INFORMATION CONTACT:

Alan B. Abraham, Financial Analyst, Office of Lender Relations and Certification, Small Business Administration, 1441 L Street N.W., Room 804, Washington, D.C. 20416 (202) 653-9181.

SUPPLEMENTARY INFORMATION: On May 24, 1982, SBA published its proposed regulation (47 FR 22374). Public comments were invited on or before June 23, 1982. A total of 11 comments were received.

Most comments addressed the requirement that a 503 development company's board of directors contain representation from the appropriate level of governmental, and from private lending institutions. Many indicated that such a requirement could lead to a conflict of interest because city or government officials are not permitted to serve on boards of organizations which receive city funds. After due consideration, this requirement has been modified to only require representation on the Board of Directors from private lending institutions.

The proposed provision regarding elimination of the regulation that 503 companies operating on a statewide basis be authorized by a special act of the state legislature was generally accepted. This provision was adopted by the Agency. The Agency has also determined to permit 503 companies to operate beyond State borders where a city is bisected by a State line, and under certain limitations where an economic area crosses a State line.

Two comments were received concerning the membership requirements for 503 development companies. One objected to the standardization of 25 members for all development companies and the other objected to requiring governmental membership for multi-county 503 development companies. The provision requiring at least 25 members provides wide participation and will be adopted by the Agency. The requirement for governmental membership, specifically in multi-county 503 development companies, has been modified to permit more flexibility in meeting this provision.

SBA hereby certifies that this final rule will not have a significant economic impact on a substantial number of small businesses. In addition this rule is not a major rule within the meaning of Executive Order 12291.

List of Subjects in 13 CFR Part 108

Loan programs—Business (503 Programs).

PART 108—LOANS TO STATE AND LOCAL DEVELOPMENT COMPANIES

Pursuant to authority contained in section 308(c) of the Small Business Investment Act of 1958 (SBI Act), 15 U.S.C. 687, Chapter I, Part 108 of Title 13, Code of Federal Regulations is being amended as follows: Section 108.503-1 is amended by revising the introductory paragraph, paragraph (b) and paragraph (c) to read as follows:

§ 108.503-1 Eligibility requirements.

SBA is authorized to guarantee the timely payment of all principal and interest as scheduled on any debenture issued by any qualified development company. The full faith and credit of the United States is pledged to the payments of all amounts so guaranteed. Such debentures (herein sometimes referred to as 503 debentures) will be issued within certain limits solely for the purpose of assisting identifiable small business concerns to finance plant acquisition, construction, conversion, or expansion, including the acquisition of land. Plant construction includes the

acquisition and installation of machinery and equipment. For the purpose of this section, development companies qualified to participate in this program (herein sometimes referred to as "503 companies") shall be formally certified by SBA on the terms and conditions contained herein, consistent with the intent of Congress. To qualify, a development company must demonstrate to the satisfaction of SBA, the following:

(a) * * *

(b) *Area of Operations.* A 503 company shall not be certified to operate in more than one state, except that a 503 company may operate within two States if (i) a State line bisects a city, in which case the 503 company may operate city-wide or (ii) the 503 company has obtained prior written approval to operate within a contiguous economic area, as determined by SBA, which crosses a State line.

(c) *Membership.* The 503 company must be representative of the state, or subdivision thereof, in which the company operates. Evidence of a 503 company representation shall include the following:

(1) The 503 company must have at least 25 individual members or stockholders that are representative of its area of operation. No member or stockholder may own or control more than ten percent of the development company's stock or voting membership.

(2) The membership must include representation from each of the following four groups, except that government representation may be by other than membership.

(i) *Government.* Representation from the appropriate level of government that reflects the 503 development company's area of operation. For example, 503 development companies operating on a statewide basis must have representation from an economic development agency of the state government. Countywide or multi-county 503 companies must have government representation that ensures that each county is represented. Citywide 503 development companies must have representation from the city government.

(ii) *Private Lending Institutions;*

(iii) *Community Organizations;*

(iv) *Business Organizations;*

(3) At least one private lending institution must be represented on the board of directors.

(4) Any 503 development companies which do not meet the above requirements shall do so on or before one year from August 10, 1982.

(Catalog of Federal Domestic Assistance No. 59.013 State and Local Development Company Loans)

Dated: August 5, 1982.

James C. Sanders,
Administrator.

[FR Doc. 82-21770 Filed 8-9-82; 8:45 am]

BILLING CODE 8025-01-M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 176

[Docket No. 81F-0405]

Indirect Food Additives: Paper and Paperboard Components

AGENCY: Food and Drug Administration.

ACTION: Final rule.

SUMMARY: The Food and Drug Administration (FDA) is amending the food additive regulations to provide for the safe use of *o*-phthalic acid modified hydrolyzed soy protein isolate as a component of coatings for paper and paperboard that contact dry foods. This action is in response to a petition filed by the Ralston Purina Co.

DATES: Effective August 10, 1982; objections by September 9, 1982.

ADDRESS: Written objections to the Dockets Management Branch (HFA-305), Food and Drug Administration, Rm. 4-62, 5600 Fishers Lane, Rockville, MD 20857.

FOR FURTHER INFORMATION CONTACT: James B. Lamb, Bureau of Foods (HFF-334), Food and Drug Administration, 200 C St. SW., Washington, DC 20204, 202-472-5690.

SUPPLEMENTARY INFORMATION: In a notice published in the Federal Register of March 12, 1982 (47 FR 10907), FDA announced that a petition (FAP OB3531) had been filed by the Ralston Purina Co., Checkerboard Square, St. Louis, MO 63188, proposing that the food additive regulations be amended to provide for the safe use of phthalate modified hydrolyzed soy isolate as a binder-adhesive component of coatings for paper and paperboard that contact foods.

FDA has evaluated the data in the petition and other relevant material and concludes that the food additive is more properly identified as *o*-phthalic acid modified hydrolyzed soy protein isolate, that its proposed use is safe, and that the regulations should be amended as set forth below.

In accordance with § 171.1(h) (21 CFR 171.1(h)), the petition and the documents that FDA considered and relied upon in reaching its decision to approve the petition are available for inspection at the Bureau of Foods (address above) by appointment with the information contact person listed above. As provided in 21 CFR 171.1(h)(2), the agency will remove from the documents any materials that are not available for public disclosure before making the documents available for inspection.

The agency has carefully considered the potential environmental effects of this action and has concluded that the action will not have a significant impact on the human environment and that an environmental impact statement is not required. The agency's finding of no significant impact and the evidence supporting that finding may be seen in the Dockets Management Branch (address above), between 9 a.m. and 4 p.m., Monday through Friday.

List of Subjects in 21 CFR Part 176

Food additives, Food packaging, Paper and paperboard.

PART 176—INDIRECT FOOD ADDITIVES; PAPER AND PAPERBOARD COMPONENTS

Therefore under the Federal Food, Drug, and Cosmetic Act (secs. 201(s), 409, 72 Stat. 1784-1788 as amended (21 U.S.C. 321(s), 348)) and under authority delegated to the Commissioner of Food and Drugs (21 CFR 5.10), Part 176 is amended in § 176.180(b)(2) by alphabetically inserting a new item in the list of substances to read as follows:

PART 176—INDIRECT FOOD ADDITIVES; PAPER AND PAPERBOARD COMPONENTS

§ 176.180 Components of paper and paperboard in contact with dry food.

(b) ***
(2) ***

List of substances	Limitations
o-Phthalic acid modified hydrolyzed soy protein isolate.	.

Any person who will be adversely affected by the foregoing regulation may at any time on or before September 9, 1982 submit to the Dockets Management Branch written objections thereto and may make a written request for a public hearing on the stated objections. Each objection shall be separately numbered and each numbered objection shall specify with particularity the provision

of the regulation to which objection is made. Each numbered objection on which a hearing is requested shall specifically so state; failure to request a hearing for any particular objection shall constitute a waiver of the right to a hearing on the objection. Each number objection for which a hearing is requested shall include a detailed description and analysis of the specific factual information intended to be presented in support of the objection in the event that a hearing is held; failure to include such a description and analysis for any particular objection shall constitute a waiver of the right to a hearing on the objection. Three copies of all documents shall be submitted and shall be identified with the docket number found in brackets in the heading of this regulation. Received objections may be seen in the office above between 9 a.m. and 4 p.m., Monday through Friday.

Effective date. This regulation shall become effective August 10, 1982.

((Secs. 201(s), 409, 72 Stat. 1784-1788 as amended (21 U.S.C. 321(s), 348).))

Dated: August 3, 1982.

William F. Randolph,
Acting Associate Commissioner for
Regulatory Affairs.

[FR Doc. 82-21636 Filed 8-9-82; 8:45 am]

BILLING CODE 4160-01-M

21 CFR Part 558

New Animal Drugs for Use in Animal Feeds; Lincomycin

AGENCY: Food and Drug Administration.

ACTION: Final rule.

SUMMARY: The Food and Drug Administration (FDA) is amending the new animal drug regulation for lincomycin to reflect approval of a supplemental new animal drug application (NADA) filed by the Upjohn Co. providing for use of a currently approved 50-gram-per-pound lincomycin premix for the manufacture of a complete broiler feed. The feed is used for increase in rate of weight gain, improved feed efficiency, and control of necrotic enteritis.

EFFECTIVE DATE: August 10, 1982.

FOR FURTHER INFORMATION CONTACT: Lonnie W. Luther, Bureau of Veterinary Medicine (HFV-147), Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857, 301-443-4317.

SUPPLEMENTARY INFORMATION: The Upjohn Co., Kalamazoo, MI 49001, filed a supplemental NADA (97-505V) providing for the addition of broiler use to the 50-gram-per-pound lincomycin

premix. The firm currently holds approval for use of the premix for swine feeds. The firm also holds approval for use of a 4-gram-per-pound lincomycin premix and a 20-gram-per-pound lincomycin premix for the manufacture of broiler feeds and swine feeds for the same indications of use provided for by this supplement.

The supplement is approved and the regulations are amended accordingly.

This approval does not change the approved conditions of use of the drug. Consequently, approval of this supplemental NADA poses no increased human risk from exposure to residues of the animal drug, nor does it change the conditions of the drug's safe use in the target animal species.

Accordingly, under the Bureau of Veterinary Medicine's supplemental approval policy (42 FR 64367; December 23, 1977), this is a Category II supplemental approval which does not require reevaluation of the safety and effectiveness data in the original approval. Approval of this supplement does not require the generation of new effectiveness or safety data in support of this use. Therefore, a freedom of information summary is not required for this action. A summary of safety and effectiveness data and information submitted previously may be seen in the Dockets Management Branch (HFA-305), Food and Drug Administration, Rm. 4-62, 5600 Fishers Lane, Rockville, MD 20857, from 9 a.m. to 4 p.m., Monday through Friday.

The Bureau of Veterinary Medicine has determined pursuant to 21 CFR 25.24(d)(1)(i) and (iii) (proposed December 11, 1979; 44 FR 71742) that this action is of a type that does not individually or cumulatively have a significant impact on the human environment. Therefore, neither an environmental assessment nor an environmental impact statement is required.

This action is governed by the provisions of 5 U.S.C. 556 and 557 and is therefore excluded from Executive Order 12291 by section 1(a)(1) of the Order.

List of Subjects in 21 CFR Part 558

Animal drugs, Animal feeds.

PART 558—NEW ANIMAL DRUGS FOR USE IN ANIMAL FEEDS

Therefore, under the Federal Food, Drug, and Cosmetic Act (sec. 512(i), 82 Stat. 347 (21 U.S.C. 360b(i))) and under authority delegated to the Commissioner of Food and Drugs (21 CFR 5.10) and redelegated to the Bureau of Veterinary